

# **AMMUNITION END ITEMS AND COMPONENTS**

**NORMALLY PROCURED**

**BY THE**

**U.S. ARMY**

**AMMUNITION PROCUREMENT AND SUPPLY AGENCY**

**JOLIET, ILLINOIS**



**NOVEMBER 1968**

**EDITION**





DEPARTMENT OF THE ARMY  
AMMUNITION PROCUREMENT AND SUPPLY AGENCY  
JOLIET, ILLINOIS 60436

IN REPLY REFER TO:

SMUAP-APZ

FOREWORD

This catalogue is published to provide a list of items, procured by this Agency, on which you may desire to submit bids or proposals. The descriptive data pertinent to each item contained herein is informational only. Actual submission of bids or proposals is to be based on the specific data contained in drawings and specifications provided at the time of solicitation.

Interested potential suppliers are invited to visit the display room maintained by our Small Business and Labor Surplus Advisor. The items displayed are not bid samples but are for orientation only. The display room is open during normal working hours - 7:15 a.m. to 3:45 p.m. - Monday through Friday each week, except holidays.

Potential suppliers are urged to communicate with our Industry Liaison Office regarding any program. The mailing symbol is SMUAP-APZ. This office will be glad to assist you. If they cannot answer all your questions, they can put you in touch with those who can.

Your comments on the value of this publication to your concern, or which will improve the services we are trying to render are sincerely solicited.

*W. E. Archibald*  
W. E. ARCHIBALD

Army/Industry Materiel Information Liaison Officer



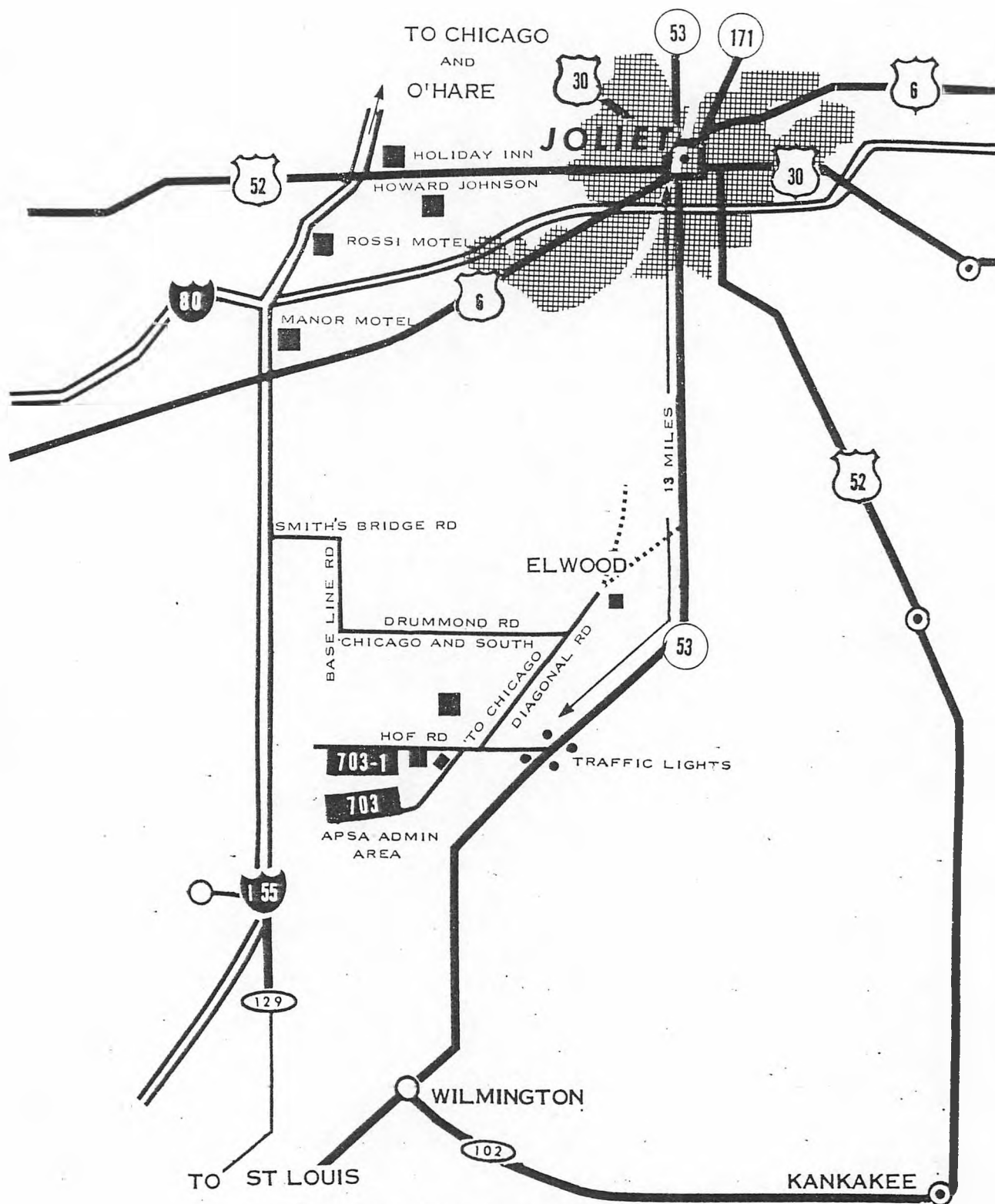


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\*This Catalogue supersedes APSA Pamphlet 715-1, dated September 1967.





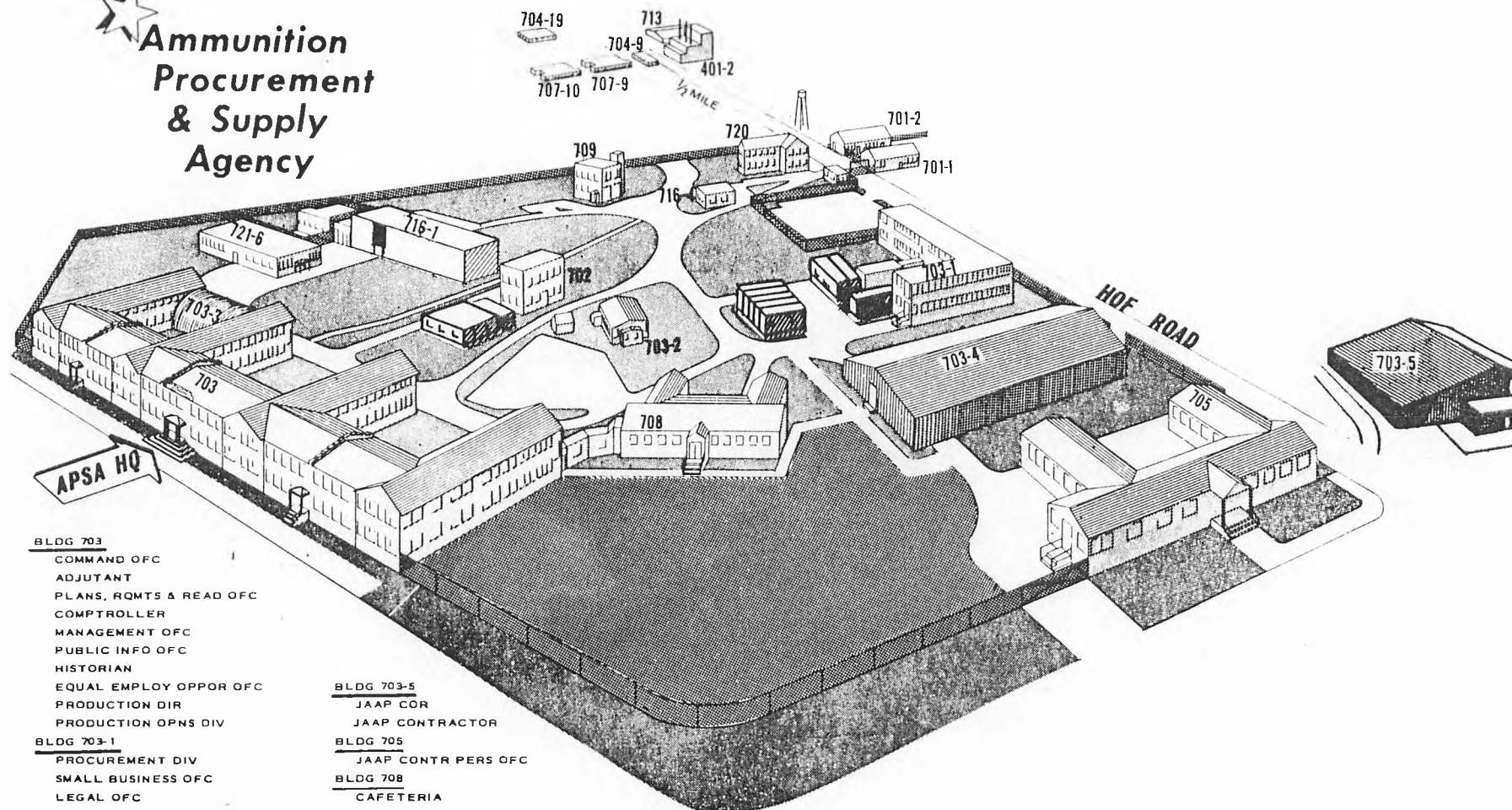
# AMMUNITION PROCUREMENT AND SUPPLY AGENCY

TO

O'HARE AIRPORT	55 MILES
KANKAKEE	30 MILES
JOLIET	10 MILES



# ★ Ammunition Procurement & Supply Agency



## BLDG 703

COMMAND OFC  
ADJUTANT  
PLANS, RQMTS & READ OFC  
COMPTROLLER  
MANAGEMENT OFC  
PUBLIC INFO OFC  
HISTORIAN  
EQUAL EMPLOY OPPOR OFC  
PRODUCTION DIR  
PRODUCTION OPNS DIV

## BLDG 703-1

PROCUREMENT DIV  
SMALL BUSINESS OFC  
LEGAL OFC  
AMC SELECTED AMMO FLD OFC

## BLDG 703-2

ARMY AUDIT AGENCY  
GEN ACCOUNTING OFC

## BLDG 703-3

SUPPLY AND FORMS

## BLDG 703-4

SUPPLY DIR  
MAINT MGT DIR  
TRANS & TRAF MGT OFC  
MARINE CORPS LIAISON OFC  
MUCOM CUST ASSIST OFC

## BLDG 703-5

JAAP COR  
JAAP CONTRACTOR

## BLDG 705

JAAP CONTR PERS OFC

## BLDG 708

CAFETERIA

## BLDG 716-1

DATA SYSTEMS OFC  
COMMUNICATIONS

## BLDG 716-4

TRAINING OFC

## BLDG 720

PRODUCTION BASE DIV

## BLDG 721-6

REPRODUCTION  
PHOTO LAB  
PUBLICATIONS DISTR

## MOBILE UNITS

INSPECTOR GENERAL  
PROCUREMENT CONTR NEGOTIATION  
LABOR REL OFC  
SYSTEMS & PROCEDURES OFC - PROD DIV  
COMMODITY MGT SECT - SUPPLY DIR  
LOGISTICAL SUP BR - MAINT DIR  
AMC FLD OFC  
PA MIDWEST TECH OFC

## OTHER AREAS

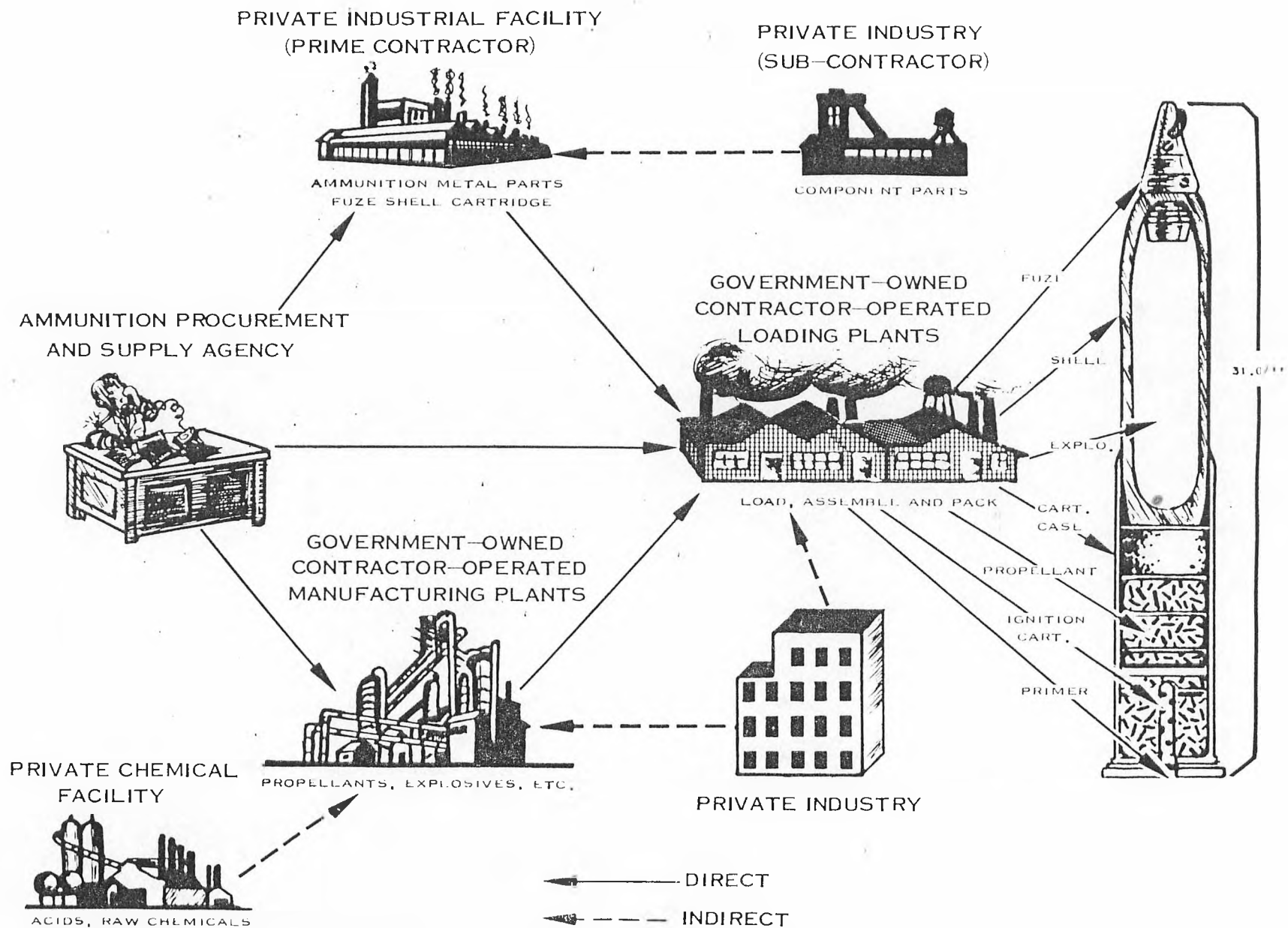
GROUP 60 BLDGS  
MANPOWER OFC  
QUAL ASSUR DIR  
SECURITY OFC  
SAFETY OFC  
DISPENSARY  
GROUP 8 BLDGS  
ENGINEERING DIV



100-100-100  
100-100-100  
100-100-100  
100-100-100



# THE AMMUNITION PROCUREMENT & PRODUCTION MISSION



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## INFORMATION OF FEDERAL PROCUREMENT

In addition to this Agency, the Department of Defense, General Services Administration and the Department of Commerce have field offices in many cities which are equipped to assist business firms in locating opportunities to participate in Federal Procurement. In addition to these offices, there are a number of publications available which set forth guidelines for doing business with the Government and provide the locations of Military and Civilian procuring activities. One of these principal publications is the U. S. Government Purchasing, Specifications and Sales Directory which contains separate listings of the products and services bought by the Military and Civilian agencies, keyed to the purchasing offices which buy them; a listing of sources of the specifications used by purchasing offices, and detailed information on Government Sales of Surplus property.

Copies of this directory may be obtained for 60 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 20402 or from any field office of the Department of Commerce.

## ADVANCED PLANNING PROCUREMENT INFORMATION

The APPI's show the quantity of a particular item which is planned for procurement over the next three to six years. This information is disseminated from Army/Industry Materiel Information Logistic Offices at the following locations on the first Tuesday of each month:

- US Army Electronics Command, Fort Monmouth, New Jersey
- US Army Tank-Automotive Center, Warren, Michigan
- US Army Aviation Materiel Command, St. Louis, Missouri
- US Army Northwestern Procurement Agency, Oakland, California
- US Army Southwestern Procurement Agency, Pasadena, California
- US Army Weapons Command, Rock Island, Illinois
- US Army Mobility Equipment Center, St. Louis, Missouri
- US Army Missile Command, Redstone Arsenal, Alabama
- US Army Ammunition Procurement and Supply Agency, Joliet, Illinois
- Picatinny Arsenal, Dover, New Jersey
- Frankford Arsenal, Philadelphia, Pennsylvania
- Edgewood Arsenal, Edgewood, Maryland

Synopses for these items are also published in the Commerce Business Daily on the first Tuesday of each month.

## COMMERCE BUSINESS DAILY

An important source of information in identifying Federal Procurement actions is the "Commerce Business Daily" published each Monday through Friday. This publication lists proposed procurement of Federal Agencies; subcontract opportunities offered by defense prime contractors; recent contract awards which provide leads for additional subcontract opportunities; surplus sales information; and other pertinent information on Federal Procurement activities.

The "Commerce Business Daily" is currently available by subscription for \$15. per year via regular mail and \$42. per year via airmail. Checks or money orders should be made payable to the Superintendent of Documents, Government Printing Office, Washington, D. C., 20402, and sent to Superintendent of Documents (Commerce Business Daily) Government Printing Office, Washington, D. C., 20402.

## SET-ASIDES FOR LABOR SURPLUS AREAS OR SMALL BUSINESS FIRMS

It is the policy of the Department of Defense to aid labor surplus areas. In order to carry out this policy, a part of a procurement may be set aside for negotiation with concerns which will perform, or cause to be performed, in a labor surplus area, a substantial portion of the contracts thus awarded.

After first giving consideration to Labor Surplus Set-asides the law, and Department of Defense Regulations, provides that entire procurements or parts of procurements may be set aside exclusively for the competition of Small Business firms. For this purpose, Small Business is generally defined in Title 13, Chapter I, Part 121, Small Business Size Standards (Revision 3, and Amendments thereto), and the Armed Services Procurement Regulation, Paragraph 1-701.4.

## PROCUREMENT BY FORMAL ADVERTISING

Formal Advertising means procurement by competitive bids and awards as prescribed in Section II, Armed Services Procurement Regulations, and involves the following basic steps:

(i) Preparation of the invitation for bids, describing the requirements of the Government clearly, accurately and completely.

(ii) Publicizing the invitation for bids, through distribution to prospective bidders listed in this Agency's bidders list, posting in public places, and such other means as may be appropriate, in sufficient time to enable prospective bidders to prepare and submit bids before the time set for public openings.

(iii) Submission of bids by prospective contractors; and

(iv) Awarding the contract, after the bids are publicly opened, to that responsible bidder whose bid, conforming to the invitation for bids, will be most advantageous to the Government, price and other factors considered.

## PROCUREMENT BY NEGOTIATION

Negotiated procurement is accomplished in accordance with Section III, Armed Services Procurement Regulation, with the maximum amount of competition available under the circumstances existing at the time, by issuance of a Request for Proposal and entering into a contract with the lowest responsible offeror after negotiations.

The policy of this Agency is to issue the Request for Proposal and request return so as to allow the offeror six weeks to review the technical data and secure quotations before returning his proposal. However, in many cases there is insufficient time to allow the supplier this much time to submit his proposal. Requests for proposals, and further information relating thereto, are available from the Army/Industry Procurement Liaison Office, Procurement Division, SMUAP-APZ, Ammunition Procurement and Supply Agency, Joliet, Illinois, 60436.





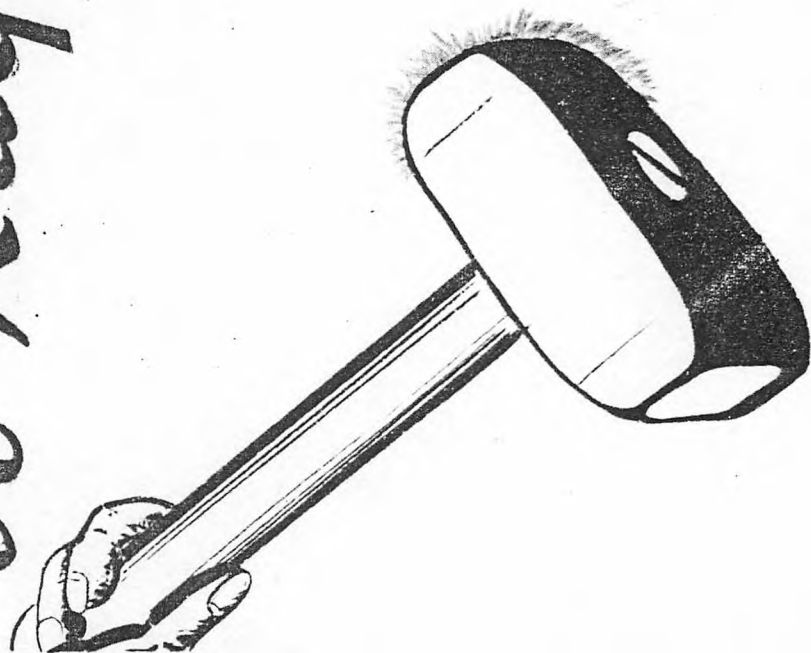
**MECHANISMS**

*must*

*be Rugged*

*yet*

**ACCURATE**



W.C. Calkins

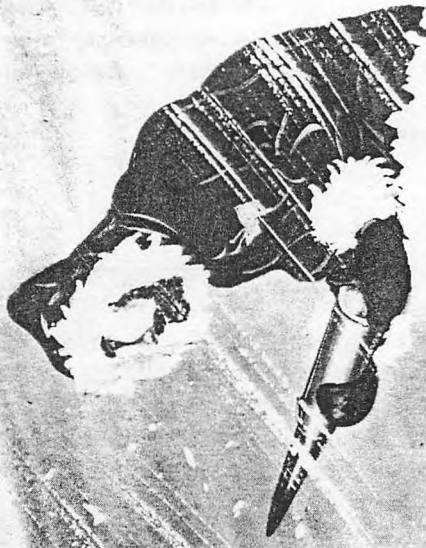
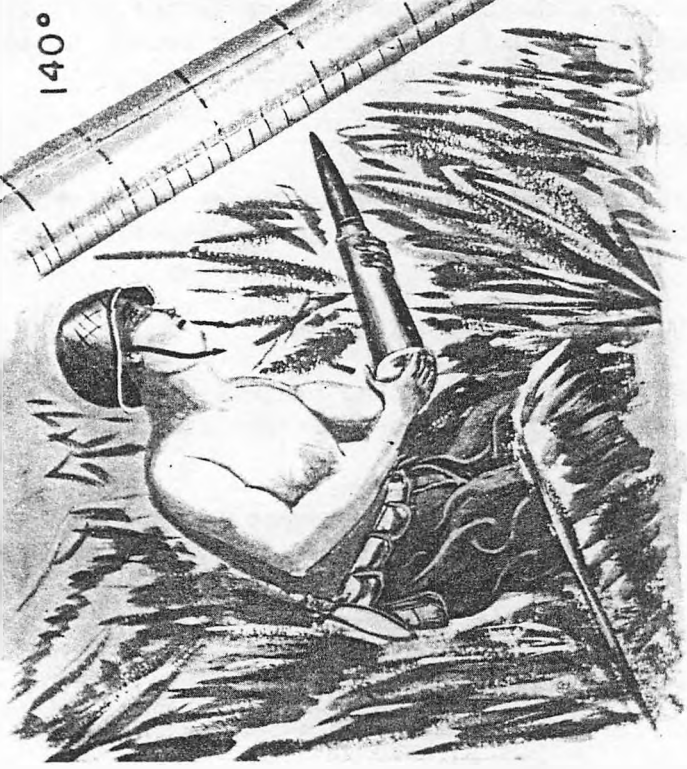
1880

Calcutta

MUNITIONS MUST WORK

140°

IN EXTREME



-65°

Temperatures



DEPARTMENT OF THE ARMY  
AMMUNITION PROCUREMENT AND SUPPLY AGENCY  
JOLIET, ILLINOIS 60436

IN REPLY REFER TO:

BIDDERS LIST

Inclosed with this booklet is Standard Form 129, DD Form 558-1 and SMUAP Form 417, together with an Instruction Sheet, for completion and return to this Agency. On receipt of these forms, properly completed, action will be initiated to place the name of your firm on the lists for those items for which you qualify as a regular Dealer or Manufacturer.

Once entered on a bidders list for an item and bids/proposals are forwarded for your consideration, failure to respond to two successive solicitations may result in removal of your concern from the Bidder's List for the item concerned.

INDEX AND FORMAT

The items described in the booklet are in alphabetical order and in categories by size. This loose-leaf system was adopted to permit an easy method of adding or deleting items as changes occur.

The item sequence numbers indicated are for the exclusive use of this Agency and do not correspond with any other numbers in the Federal Procurement System. These numbers should be placed in the column titled, "Commodity Code No.", when completing the SMUAP Form 417.

MAINTENANCE OF BOOKLET

Pages are punched for use in three ring binders for ease in handling future changes. When changes are furnished a new index will also be provided.

SUGGESTIONS - COMMENTS

Suggestions and/or comments relative to form, contents, purpose, or use of this booklet are invited and should be referred to:

Commanding General  
Ammunition Procurement and Supply Agency  
Army/Industry Material Information Officer  
Joliet, Illinois 60436

STANDARD FORM 129 JANUARY 1966 EDITION FPR (41 CFR) 1-16.80		<h2 style="margin: 0;">BIDDER'S MAILING LIST APPLICATION</h2>		INITIAL APPLICATION REVISION
<i>Fill in all spaces. Insert "NA" in blocks not applicable. Type or print all entries. See reverse for instructions.</i>				
TO (Enter name and address of Federal agency to which form is submitted. Include ZIP code)				DATE
1. APPLICANT'S NAME AND ADDRESS (Include county and ZIP code)		2. ADDRESS (Include county and ZIP code) TO WHICH SOLICITATIONS ARE TO BE MAILED (If different from item 1)		
3. TYPE OF ORGANIZATION (Check one)				4. HOW LONG IN PRESENT BUSINESS
<input type="checkbox"/> INDIVIDUAL		<input type="checkbox"/> PARTNERSHIP		
<input type="checkbox"/> CORPORATION, INCORPORATED UNDER THE LAWS OF THE STATE OF		<input type="checkbox"/> NON-PROFIT ORGANIZATION		
5. NAMES OF OFFICERS, OWNERS, OR PARTNERS				
PRESIDENT		VICE PRESIDENT		SECRETARY
TREASURER		OWNERS OR PARTNERS		
6. AFFILIATES OF APPLICANT (Names, locations, and nature of affiliation. See definition on reverse)				
7. PERSONS AUTHORIZED TO SIGN BIDS, OFFERS, AND CONTRACTS IN YOUR NAME (Indicate if agent)				
NAME		OFFICIAL CAPACITY		TEL. NO. (Incl. area code)
8. IDENTIFY EQUIPMENT, SUPPLIES, MATERIALS, AND/OR SERVICES ON WHICH YOU DESIRE TO BID (See attached Federal agency's supplemental listing and instructions, if any)				
9. TYPE OF BUSINESS (See definitions on reverse)				
<input type="checkbox"/> MANUFACTURER OR PRODUCER		<input type="checkbox"/> REGULAR DEALER (Type 1)		<input type="checkbox"/> REGULAR DEALER (Type 2)
<input type="checkbox"/> SERVICE ESTABLISHMENT		<input type="checkbox"/> CONSTRUCTION CONCERN		<input type="checkbox"/> RESEARCH AND DEVELOPMENT FIRM
<input type="checkbox"/> SURPLUS DEALER (Check this box if you are also a dealer in surplus goods)				
10. SIZE OF BUSINESS (See definitions on reverse)				
<input type="checkbox"/> SMALL BUSINESS CONCERN		<input type="checkbox"/> OTHER THAN SMALL BUSINESS CONCERN		
* If you are a small business concern, fill in (a) and (b):		(a) AVERAGE NUMBER OF EMPLOYEES (Including affiliates) FOR FOUR PRECEDING CALENDAR QUARTERS		(b) AVERAGE ANNUAL SALES OR RECEIPTS FOR PRECEDING THREE FISCAL YEARS
11. FLOOR SPACE (Square feet)		12. NET WORTH		
MANUFACTURING		WAREHOUSE		DATE
13. SECURITY CLEARANCE (If applicable, check highest clearance authorized)				
FOR		TOP SECRET    SECRET    CONFIDENTIAL		
KEY PERSONNEL		NAMES OF AGENCIES WHICH GRANTED SECURITY CLEARANCES (Include dates)		
PLANT ONLY		NAME AND TITLE OF PERSON AUTHORIZED TO SIGN (Type or print)		
THIS SPACE FOR USE BY THE GOVERNMENT		CERTIFICATION		
I CERTIFY THAT INFORMATION SUPPLIED HEREIN (Including all pages attached) IS CORRECT AND THAT NEITHER THE APPLICANT NOR ANY PERSON (Or concern) IS IN ANY CONNECTION WITH THE APPLICANT AS A PRINCIPAL OR OFFICER, SO FAR AS IS KNOWN, IS NOW DEBARRED OR OTHERWISE DECLARED INELIGIBLE BY ANY AGENCY OF THE FEDERAL GOVERNMENT FROM BIDDING FOR FURNISHING MATERIALS, SUPPLIES, OR SERVICES TO THE GOVERNMENT OR ANY AGENCY THEREOF.		SIGNATURE		
NAME AND TITLE OF PERSON AUTHORIZED TO SIGN (Type or print)		NAME AND TITLE OF PERSON AUTHORIZED TO SIGN (Type or print)		

## INFORMATION AND INSTRUCTIONS

Persons or concerns wishing to be added to a particular agency's bidder's mailing list for supplies or services shall file this properly completed and certified Bidder's Mailing List Application, together with such other lists as may be attached to the application form, with each procurement office of the Federal agency with which they desire to do business. If a Federal agency has attached a supplemental Commodity List with instructions, complete the application as instructed. Otherwise, identify in Item 8 the equipment, supplies, and/or services on which you desire to bid. *The application shall be submitted and signed by the principal as distinguished from an agent, however constituted.*

After placement on the bidder's mailing list of an agency, a supplier's failure to respond (*submission of bid, or notice in writing, that you are unable to bid on that particular transaction but wish to remain on the active bidder's mailing list for that particular item*) to Invitations for Bids will be understood by the agency to indicate lack of interest and concurrence in the removal of the supplier's name from the purchasing activity's bidder's mailing list for the items concerned.

### TYPE OF BUSINESS DEFINITIONS

(See Item No. 9)

- A. **MANUFACTURER OR PRODUCER** means a person (or concern) owning, operating, or maintaining a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment of the general character of those listed in Item No. 8, or in the Federal Agency's supplemental Commodity List, if attached.
- B. **REGULAR DEALER (Type 1)** means a person (or concern) who owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles, or equipment of the general character listed in Item No. 8 or in the Federal Agency's supplemental Commodity List, if attached, are bought, kept in stock, and sold to the public in the usual course of business.
- C. **REGULAR DEALER (Type 2)** in the case of supplies of particular kinds (*at present, petroleum, lumber and timber products, machine tools, raw cotton, green coffee, hay, grain, feed, or straw, agricultural liming materials, tea, raw or unmanufactured cotton linters*). "REGULAR DEALER" means a person (or concern) satisfying the requirements of the regulations (Code of Federal Regulations, Title 41, 50-201.101(b)) as amended from time to time, prescribed by the Secretary of Labor under the Walsh-Healey Public Contracts Act (Title 41 U.S. Code 35-45). For coal dealers, see Code of Federal Regulations, Title 41, 50-201.604(a).
- D. **SERVICE ESTABLISHMENT** means a concern (or person) which owns, operates, or maintains any type of business which is principally engaged in the furnishing of nonpersonal services, such as (*but not limited to*) repairing, cleaning, redecorating, or rental of personal property, including the furnishing of necessary repair parts or other supplies as part of the services performed.
- E. **CONSTRUCTION CONCERN** means a concern (or person) engaged in construction, alteration or repair (including dredging, excavating, and painting) of buildings, structures or other real property.

### DEFINITIONS RELATING TO SIZE OF BUSINESS

- A. **SMALL BUSINESS CONCERN.** A small business concern for the purpose of Government procurement is a concern, including its affiliates, which is independently owned and operated, is not dominant in the field of operation in which it is bidding on Government contracts and can further qualify under the criteria concerning number of employees, average annual receipts, or other criteria, as prescribed by the Small Business Administration. (See Code of Federal Regulations, Title 13, Part 121, as amended, which contains detailed industry definitions and related procedures.)
- B. **AFFILIATES.** Business concerns are affiliates of each other when either directly or indirectly (i) one concern controls or has the power to control the other, or (ii) a third party controls or has the power to control both. In determining whether concerns are independently owned and operated and whether or not affiliation exists, consideration is given to all appropriate factors including common ownership, common management, and contractual relationship. (See Items Nos. 6 and 10.)
- C. **NUMBER OF EMPLOYEES.** In connection with the determination of small business status, "number of employees" means the average employment of any concern, including the employees of its domestic and foreign affiliates, based on the number of persons employed on a full-time, part-time, temporary, or any other basis during the pay period ending nearest the last day of the third month in each calendar quarter for the preceding four quarters. If a concern has not been in existence for four full calendar quarters, "number of employees" means the average employment of such concern and its affiliates during the period such concern has been in existence based on the number of persons employed during the pay period ending nearest the last day of each month. (See Item No. 10.)

### COMMERCE BUSINESS DAILY

The Commerce Business Daily, published by the Department of Commerce, contains information concerning proposed procurements, sales, and contract awards. For further information concerning this publication, contact your local Commerce Field Office.



# BIDDER'S MAILING LIST APPLICATION SUPPLEMENT

Form Approved  
Budget Bureau No. 22-R091.6

IF ADDITIONAL SPACE IS REQUIRED, ATTACH SEPARATE SHEET AND REFER TO ITEM NUMBER

NUMBER OF EMPLOYEES	OPERATIONS AT	ENGINEERING	PRODUCTION	OTHERS	TOTAL
	MAXIMUM LEVEL				
	MINIMUM (During last 2 yrs.)				
	PRESENT LEVEL				

## 2. CONTRACTS HELD WITH ARMED SERVICES DURING PAST 3 YEARS (List separately)

CONTRACT NUMBER	DESCRIPTION OF ITEMS	DOLLAR VALUE

## 3. TYPES OF EQUIPMENT, COMPONENTS, MATERIAL OR SERVICES NOW BEING MANUFACTURED, PERFORMED, OR DEVELOPED (Commercial and Military)

4. FLOOR SPACE (sq. ft.)	ENGINEERING	LABORATORY	TOTAL FLOOR SPACE (Including warehouse and manufacturing space)
--------------------------	-------------	------------	---

## 5. BRIEF DESCRIPTION OF BUILDINGS (Type of construction and use)

## 6. MACHINERY AND EQUIPMENT<sup>1</sup>

## 7. TESTING AND/OR LABORATORY FACILITIES<sup>1</sup>

## 8. ADDRESSES (Including counties) OF FACTORIES, FOUNDRIES, MINES, OR YARDS, IF ANY (Specify)

## 9. SECURITY CLEARANCE (If applicable, check highest clearance authorized by clearing agency)

FOR KEY PERSONNEL			FOR PLANT ONLY		
<input type="checkbox"/> TOP SECRET	<input type="checkbox"/>	<input type="checkbox"/> CONFIDENTIAL	<input type="checkbox"/> SECRET	<input type="checkbox"/>	<input type="checkbox"/> CONFIDENTIAL
<input type="checkbox"/> SECRET					

LIST DEPARTMENTS WHICH HAVE GRANTED SECURITY CLEARANCE AND DATES GRANTED

10. INCLOSURES (Check) ☐ FINANCIAL STATEMENTS, INCLUDING OPERATING STATEMENTS ☐ DESCRIPTIVE LITERATURE  
☐ ADDITIONAL INFORMATION ATTACHED ☐ BROCHURE ☐ CATALOG ☐ PHOTOGRAPHS

## 11. I CERTIFY THAT THE INFORMATION SUPPLIED HEREIN (Including any attachments) IS CORRECT

DA--	NAME AND ADDRESS OF APPLICANT	SIGNATURE

<sup>1</sup>Give brief, representative outline of type and condition of machinery, equipment (6), and facilities (7) available; if not owned by firm, give status in detail.

DD FORM 558-1  
1 AUG 60

EDITION OF 1 JAN 54 IS OBSOLETE.

\* U.S. GOVERNMENT PRINTING OFFICE : 1962 O-634755



COMMODITY LIST DATA		
COMPANY NAME		
ADDRESS OF COMPANY		
SIGNATURE OF RESPONSIBLE COMPANY OFFICER		
COMMODITY CODE NO.	NOMENCLATURE	

COMMODITY CODE NO.	NOMENCLATURE



DEPARTMENT OF THE ARMY  
AMMUNITION PROCUREMENT AND SUPPLY AGENCY  
JOLIET, ILLINOIS 60436

IN REPLY REFER TO:

SMUAP-APZ

INSTRUCTION SHEET

Firms Desiring inclusion on this Agency's approved Bidder's Mailing List must complete, sign and return the following inclosed forms:

- (a) Bidder's Mailing List Application, Standard Form 129
- (b) Bidder's Mailing List Application Supplement, DD Form 558-1
- (c) Commodity List Data, SMUAP Form 417

NOTE: Enter in Block 16 on Standard Form 129 the total number of employees including affiliates.

The above forms are located between Page V and the index in this Catalogue.

You must indicate on SMUAP Form 417 the code number of the item(s) as listed in the index which your firm is capable of producing or supplying. The code numbers are listed opposite the item description in the Catalogue.

The completed signed forms are to be mailed to the following address:

Commanding General  
U. S. Army Ammunition Procurement & Supply Agency  
ATTN: A/IMILO  
Joliet, Illinois 60436

If the required completed application forms are not received within 30 days after date mailed from this Agency, it will be assumed your firm does not wish to be included on our Approved Bidder's Mailing List.

You may retain this copy of the APSA Catalogue for future reference as additions and deletions will be published periodically and mailed to those firms who are placed on our Approved Bidders List.





U. S. ARMY AMMUNITION PROCUREMENT AND SUPPLY AGENCY  
INDEX

SECTION I

(Metal Parts, Wood or Fabric, Not Loaded)

PG. NO.	NOMENCLATURE	ITEM SEQUENCE NO.
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1	Adapter, Booster, T46E4, MPTS	10488
2	Adapter, Priming M1A4	10042
2	Adapter, Special Purpose, Electrical	09933
3	Adhesive, Paste	10062
3	Adapter, Grenade Projection, M1A2	11109
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4	Arming Device Release and MPTS Assembly	09928
4	Arming Wire Clip	11278
5	Bag, Canvas Carrying, Demo. Equipment	10036
5	Base Plug, 155MM Shell	10248
5	Blasting Machine, Hdle. Operated, Mtl. Case, 10 Cap Cap.	10065
5	Body & Cone Assembly	09926
6	Bomb Leaflet, 750 Pound, M129E2, MPTS	10493
6	Bomb, 750 Pound, M117, MPTS	10535
7	Box, Packing, Ammunition f/90MM, Fiber Container, M53A4	10563
7	Box, Packing, Ammunition f/Fuze, CP, M78A1 w/Booster, M25	01084
7	Box, Packing, Ammunition f/Hand Grd. in Fiber Cont., M41A2	10211
7	Box, Packing, Ammunition f/Mine, AT, HE, Heavy, M15	01202
8	Box, Packing, Wood f/Container, M209A1, 81MM Mortar	00790
8	Box, Packing, Wood f/Container, M306, 76MM	10561
8	Box, Packing Wood f/Container T73E1, 90MM	00815
8	Box, Packing, Wood f/Container Fiber, M184A2	00835
10	Cable Assembly, Fuze Control, M71	10188
10	Cable Assembly, Fuze Control, M72	10537
10	Cable Assembly, Fuze Control, M73	10574
10	Cable Assembly, Special Purpose Elec. (Navy) 8840363	10490
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11	Cap, Blasting, Non-Electric, Inert, M7, Assembly	09876
11	Case, Cartridge, 40MM, M118, MPTS	01845
12	Case, Cartridge, 40MM, M169E2	09990
12	Case, Cartridge, 75MM, M9A1E1	10220
13	Case, Cartridge, 76MM, M171E1	10144
13	Case, Cartridge, 76mm, M88B1	01958
14	Case, Cartridge, 105MM, M14B4, Assembly, MPTS	02150
14	Case, Cartridge, M112, 90MM	02080
14	Cartridge Ejection f/CBU-14A/A	10411
15	Case, Cartridge, 105MM, XM148A1B1	09841

## SECTION I

(Continued)

PG. NO.	NOMENCLATURE	ITEM SEQUENCE NO.
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15	Case, Cartridge, 106MM, M94B1	10599
16	Case, Cartridge, 165MM, M104, MPTS	10223
16	Case, Cartridge, Combustible, 152MM, XM157	10429
17	Case, Impeller, Projectile Burster, XM175	02350
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18	Casing, Burster, M158	10162
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19	Charge, Demolition, Shaped, HE, M3E2, MPTS	10566
20	Chest, Packing, Demolition, Platoon, Engineer, Plywood	10029
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21	Closure f/Rocket 66MM, Anti-Tank, M72	10608
21	Container, Ammo. Fiber, M252A2 f/81MM Mortar	10565
21	Container, Ammo. Fiber, M53A4	03205
21	Container, Ammo. Fiber, M36A5	03154
21	Container, Ammo. Fiber, M37A5	10573
22	Container, Ammo. Fiber, M118A2 f/Fuze, PD, M525A1, M527	11034
22	Container, Ammo. Fiber, M34A1	11142
22	Container, Ammo. Fiber, M105A2	11143
22	Container, Ammo. Fiber, M422	11143
22	Container, Ammo. Fiber, M435	11145
22	Container, Ammo. Fiber, M451	11146
22	Container, Shipping & Storage, CNU-100/E	11189
23	Container, Ammo. Plastic, f/81MM, M513	11265
23	Container, Ammo. Plastic, f/90MM, M557	11266
23	Container, Ammo. Plastic, f/105MM, M578	11267
23	Container, Ammo. Plastic	11301
23	Container, Ammo. Plastic, f/TFDM Z5361	11289
23	Container, Ammo. Plastic, Rub.Maind, R388	11290
23	Container, Shipping & Storage, CNU-79/E	10307
24	Container, Shipping & Storage Warhead Section, XM477	09901
25	Crate, Box, Wirebound, Ammo. f/M2A1 and M19A1	10562
25	Crimper, Blasting Cap, M2 w/Fuze Cutter	10345
25	Cup, Closing f/105MM, Blank, M395	10356
25	Cylinder Assembly f/CBU-28	10591
26	Delay Plunger, M1	11182
26	Detonator, Delay, 15 Sec. M1E1	09856
27	Demolition Block Hook Assembly	10312
27	Demolition Kit, Projected Charge, M157, Parts	09850
28	Dispenser SUU-7A/A Assy. w/Shpg & Stor. Container, XM468	04637
30	Dispenser, Bomb, SUU-10/A Assy. w/Shpg & Stor. Container	10132
32	Dispenser, Bomb, SUU-14A/A	10526
33	Drive Assembly, Fuze Arming, M44	10575

## SECTION I

(Continued)

<u>PG.</u> <u>NO.</u>	<u>NOMENCLATURE</u>	<u>ITEM</u> <u>SEQUENCE NO.</u>
34	Fin Assembly, M2	10532
34	Fin Assembly, M131 w/Crated Lugs	10536
35	Ferromanganese	10258
35	Ferrosilicon	10257
35	Fin, M4A1, MPTS, Assembly	04822
35	Fin Assembly, M141	04830
36	Fin Assembly, M148, w/Bomb Lugs	10616
36	Fin Assembly, M149	10110
37	Firing Kit, Demo., Electrical, XM147E1	09874
39	Fuze, BD, M72A1E1, MPTS	10222
40	Fuze, PD, M525, Less Head Assembly, MPTS	10625
40	Fuze, Bomb, Nose, M904E2, MPTS	10225
41	Fuze, Bomb, Tail, M905	10377
41	Fuze, Bomb, Tail, M906, MPTS	10448
42	Fuze, Bomb, Nose, AN-M158, MPTS	10487
44	Fuze, PD, M91A2	10600
45	Fuze, Rocket, BD, M404A2, MPTS Assy	11273
45	Fuze Seat Liner Assy, f/100# Bomb	10729
46	Fuze, Rocket, Dummy, M405 f/M29A2 Practice, 3.5"	11274
46	Fuze, Rocket, M5, M421	09898
47	Fuze, Grenade, XM218	09954
48	Fuze, Grenade, M219E1	05920
49	Fuze, Mine, Comb, M605, MPTS	10571
50	Fuze, Mine, Anti-Tank, Non Metallic, M606, Assembly	10525
51	Fuze, Mine, AT, M607, MPTS	05896
52	Fuze, Proximity, M532	10602
53	Fuze, Time, M84, MPTS Assembly	05170
53	Fuze, Time, M65A1	10469
54	Fuze & Firing Pin Assembly	09929
54	Ferrule, Arming Wire	10596
55	Galvanometer	10035
55	Grenade, Hand, Fragmentation, M26A1 or M26A2, MPTS	10612
56	Grenade, Rifle, Practice, M29	10570
56	Grommet Assy. f/155MM & 8" Shell, f/175MM Proj. Mtl. Fibre	10094
57	Grommet Assembly, Plastic	10582
58	Head Assembly f/M525 & M527 Fuze	05540
58	Holder, Increment, Propellant, M1A1, M2A1, and M3	06629
59	Head Assembly, M29A2, Practice f/3.5" Rocket, MPTS	11270
59	Head Assembly, M28A2, HE, AT, 3.5" MPTS	11269
60	Igniter, EM-5, MPTS	10355

## SECTION I

(Continued)

PG NO.	NOMENCLATURE	ITEM SEQUENCE NO.
61	Launcher Rocket, 66MM, M72	06555
61	Link, Cartridge, Metal Belt, 40MM, M16	10177
61	Lug, Bomb, Suspension, MAU-67/A	10660
63	Mine, AP, M16A1, MPTS	06679
63	Mine, AO, M14#1, Non-Metallic, with Integral Fuze	06675
64	Mine, AT, M19, Non-Metallic, Plastic Parts	10560
65	Mine, AT, M21, MPTS, Assembly	06692
66	Mine, AT, XM24E1	10931
66	Miscellaneous Component Parts, BLU-4A, B, Tab	10579
66	Motor, Rocket, M3A2, MPTS Assembly	10572
67	Motor Tube Assembly, f/M28A2 Head Assy f/3.5" Rocket MPTS	11271
67	Motor Tube Assembly, f/M29A2 Head Assy f/3.5" Rocket MPTS	11272
68	Modification Kit Tube Extension	10697
69	Obturator Mechanism f/4.2" Mortar Round	10587
69	Ogive f/M406, 40MM Cartridge	11132
70	Polystyrene Support, M204A2	10291
70	Projectile, Training, 60MM, M69	11149
70	Plug, Lifting Type, Detector, Assembly	10576
70	Plug, Lifting, Eyebolt, Type G	07035
71	Projectile, 40MM, Body Assembly, M384, MPTS	09989
71	Projectile, 40MM, Practice, M385	00494
71	Projectile, 40MM, M406, MPTS	07896
72	Projectile, 40MM, M407A1, MPTS	07898
73	Projectile, 60MM, HE, M49A2E1	10624
73	Projectile, 60MM, Smoke, W0, M302, MPTS Assembly	07960
73	Projectile, 76MM, AP-T, M339	08838
74	Projectile, 76MM, Canister, M363, MPTS	01392
74	Projectile, 76MM, TP-T, M340A2, MPTS	08840
75	Projectile, 76MM, MPTS, Assembly Less Fin and Boom, M495	08040
75	Projectile, 81MM, HE, MPTS, Mortar M374	10109
76	Projectile, 81MM, Mortar M375, Smoke, W0	10163
76	Projectile, 90MM, HEAT-FS, M371E1, MPTS, Assembly	08190
77	Projectile, 90MM, TP-T, M353, MPTS	08900
77	Projectile, 90MM, Canister, M336, MPTS	10707
78	Projectile, 105MM, AODS, M392A1, MPTS	10568
79	Projectile, 105MM, M1, HE, MPTS	10640
80	Projectile, 105MM, HEAT, M456E1	08325
80	Projectile, 105MM, XM416	08345
81	Projectile, 105MM, HEP-T, M393A2, MPTS Assembled	08330
81	Projectile, 105MM, TP-T, M489, MPTS	09842
82	Projectile, 106MM, HEAT, M344A1 w/M8 Fin, MPTS	08395
83	Projectile, 106MM, HEP-T, M346A1, MPTS	01220
84	Projectile, 120MM, HE-T, M356, MPTS	08490

## SECTION I

(Continued)

PG NO.	NOMENCLATURE	ITEM SEQUENCE NO.
84	Projectile, 152MM, HEAT-T-MP, XM409E1	10392
84	Projectile, 152MM, WP, XM410, MPTS Assembly	10598
85	Projectile, 152MM, TP-T, XM411, MPTS Assembly	10390
86	Projectile, 155MM, Chemical, M121E1, MPTS Assembly	10580
86	Projectile, 4.2" WO, Smoke, M328A1	10637
87	Projectile, 4.2", HE, M329A1	10352
87	Projectile, 165MM, HEP-T, M123E1, MPTS	10224
88	Projectile, 175MM, HE, M437, MPTS Assembly	10731
88	Projectile, 8", Chemical, M426	09853
89	Projectile, HE, 155MM, M107 Metal Parts Assembly	10946
89	Projectile, 8" HE, M106	10916
89	Projectile, 155MM, Smk, WO, M110, MPTS	11111
89	Projectile, 155MM, Smk, B, E, M116E2, MPTS	11221
90	Reel, Wire, Firing 500' w/Carrying Straps (CANCELLED)	10342
91	Rocket, Motor, M54, 66MM	06800
91	Rocket, Motor, M95, MPTS, Assembly	09848
92	Rad haz Filter Assy	10471
92	Retrofit Kit	11178
93	Shipping & Storage Cont., XM473E1 Warhead f/762MM Rkt.	09910
93	Shipping & Storage Cont., Reuseable Warhead, M17A1	10577
93	Skid, Launcher, Demo, Charge, M3, Parts & Assembly	09849
94	Spacer, Lead Cup, f/T46E5 Adapter Booster	11242
94	Support, Molded, Asphalt-Asbestos f/M105A2 Fiber Ammo Con.	11154
94	Shipping & Storage Container, CNU-80/E25	10446
95	Sleeve (T45E7 Adapter Booster)	11616
95	Spacer, Front f/Shell, 155MM, Smk, M116B1, Howitzer	09972
95	Spacer, f/Shell, 155MM, Smk, M116B1, Howitzer	09973
96	Support, Top, f/Standard Contour Fuze	09948
96	Support, Bottom, f/Standard Countour Fuze	09949
97	Tail Assembly, f/M126A1, Ground Signal	10659
97	Test, Vehicle, Dummy	10176
97	Tow & Push Attachment Assy, f/Demo. Kit, M157, MPTS	10145
99	Target Detecting Device, Mark 43-Mod-0(M20E1 Sens. Elem)	10008
99	Tape, Computing, Demolition Charge	10343
101	Vane, Locking Arms & Spring Assy. f/Fuze, VT, Bomb Nose	09612
102	Warhead, 2.75", Rocket, Smoke WO, M156, MPTS	10477
102	Warhead, 2.75", Rocket, XM151, MPTS Assembly	10316
102	Warhead, Section, GM, Training XM209	10357
103	Warhead, Section, M8E1, 318MM, Practice Rocket	10266
103	Warhead, 66MM, Rocket, HE, M18 MPTS Assembly	09696
104	Warhead, Section, GM, XM131/XM44 w/Ogive Assy, MPTS	10399

# SECTION I

(Continued)

<u>PG</u> <u>NO.</u>	<u>NOMENCLATURE</u>	<u>ITEM</u> <u>SEQUENCE NO.</u>
104	Warhead, Section, 762MM, Rocket, Prac., M38 MPTS Assy	10256
105	Washer, P-133102	10230
106	Wrench, Arming, M-26, f/Mine, AT, M21	10578

## SECTION II

(Explosive and Pyrotechnic Items-Loaded)

<u>PG NO.</u>	<u>NOMENCLATURE</u>	<u>ITEM SEQUENCE NO.</u>
108	Bomb, HE, BLU-3/Bl MPTS (less body)	10308
108	Bomb, BDU-28/E, MPTS Assy (less body)	10249
109	Booster, M125A1, Assy, MPTS w/loaded M17 Detonator	00550
112	Cap, Blasting M4	10558
112	Cap, Blasting, Electric, Assembly, M6	01440
112	Cartridge, Ignition, M2A1E1 (Loaded)	01655
113	Cartridge, Ignition, M8 (Loaded)	10581
113	Cartridge, Ignition, M66 (Loaded)	01670
114	Cartridge, Ignition, M5A1 (Loaded)	01650
114	Cartridge, Ignition, M6 f/81MM Ill. Proj. M301A2 (Loaded	10714
115	Charge, Demolition Roll, M186, Parts, Loading, Assembly & Pack	11736
116	Cord, Detonating, M1, Class E. Loaded	10524
117	Dynamite, Military, M1	09845
118	Firing Device, Demolition, Pull Type, M1	10252
118	Firing Device, Pull Release Type, M3, Assembly	04886
119	Fuze, Training, Demolition Kit, XM1147	11602
120	Fuze, BD, Xm578, MPTS w/Detonator	10219
120	Fuze, Plasting Time	10117
120	Fuze, Demo. Kit, M1134, MPTS w/Detonator, Elec. M36A1	09846
121	Fuze, PD, M503A2, Detonator and Teteryl Lead Charge	11029
122	Fuze, Grenade, Hand, M204A2	05374
122	Fuze, Grenade, Hand, Practice, M205A2	05378
123	Fuze, Grenade, Hand, M206A2	05380
124	Fuze, Grenade, Hand, M217	10613
124	Fuze, MT, M562	10404
125	Fuze, MTSQ, M564	05365
126	Fuze, MT, XM565	05810
126	Fuze, XM429	11199
127	Fuze, Rocket, M412	05635
128	Fuze, Rocket, M423 & XM427 w/Set. MK59, Model 0 w/Primer	10155
129	Fuze, PD, M524A5, MPTS	05775
130	Fuze, PD, M533, Less Booster	11038
130	Fuze, PD, M551, Less Booster	05813
131	Fuze, PD, M557, Assembly	11037
131	Fuze, PD, M572, Assembly	11027
132	Fuze, PI, BD, M509A2, MPTS w/Detonator Electric M48	05748
132	Fuze, PI, BD, M530A1 Primer and Detonator Loaded	05788
133	Fuze, PI, BD, M559	11028
134	Fuze, PD, M534A1, MPTS w/Detonator	05796
136	Igniter, Time Blasting, Fuze Weatherproof, M60, Assy	09934

## SECTION II

(Continued)

<u>PG</u> <u>NO.</u>	<u>NOMENCLATURE</u>	<u>ITEM</u> <u>SEQUENCE NO.</u>
137	Primer, XM94E1	07263
137	Projectile, 60MM, Ill, M83A3, Loading Assembly	10468
139	Projectile, 81MM, Illuminating, M301A2	08090
140	Projectile, 105MM, Ill., M314A2E1, MPTS Assembly	10475
141	Projectile, 155MM, Illuminating, M485	10985
142	Projectile, 4.2", M335E1	08460
143	Plunger, f/Fuze, M524 Series	11204
143	Primer, XM109 Loaded	11250
145	Spotting Charge, Assembly for M8 Series Warhead	09909



## I L L U S T R A T I O N S

<u>PG</u> <u>NO.</u>	<u>NOMENCLATURE</u>
IIIa	Mechanisms-Rugged, Accurate
IIIb	Munitions-Temperature Extremes
Ja	Adapter Booster, T45E7
Jb	Adapter Booster, T46E4
2a	Adapter, Priming, M1A4
4a	Bay, Canvas Carrying, Demolition Kit
6a	Bomb, 750#, M117
22a	Container, CNU-100/E
26a	Detonator, Delay, 15 Sec, M1E1
27a	Demolition Kit, Projected Charge, M157
33a	Drive Assembly, Fuze Arming, M44
40a	Fuze, PD, M525
40b	Fuze, Bomb Nose, M904E2
40c	Fuze, Bomb Tail, M905
41a	Fuze, Bomb Tail, M906
41b	Fuze, Bomb Nose, AN-M158 and M159
51a	Fuze, Mine, AT, M607, Metal Parts
52a	Fuze, Proximity, M532
53a	Fuze, Time, M84
53b	Fuze, Time, M65A1
55a	Grenade, Hand, Fragmentation, M26A1 or M26A2, MPTS
61a	Launcher, Rocket, 66mm, M72
63a	Mine, AP, M16A1, MPTS
64a	Mine, AT, Non-Metallic, M19
65a	Mine, AT, M21; Bounding Mine, and 40mm Cartridge
65b	Mine, AT, M21,-Exploded View
73a	Cartridge, HE, 60mm, M49A2
73b	Cartridge, WP, 60mm, M302
74b	Canister, 76mm, M363
75a	Cartridge, HE, 81mm, M374
76a	Cartridge, HEAT, 90mm, M371A1
77a	Canister, 90mm, M336
79a	Cartridge, HE, 105mm, M1
80a	Cartridge, HEAT-T, 105mm, M456
80b	Cartridge, WP-T, 105mm, M416
82a	Cartridge, HEAT, 106mm, M344A1
83a	Cartridge, HEP-T, 106mm, M346A1
85a	Cartridge, TP-T, 152mm, XM411E3
86a	Projectile, GS, 155mm, M121
87a	Projectile, HE, 4.2", M329A1
89a	Projectile, HE, 8", M106
89b	Projectile, Smk, 155mm, M116
91a	Rocket Motor, M95

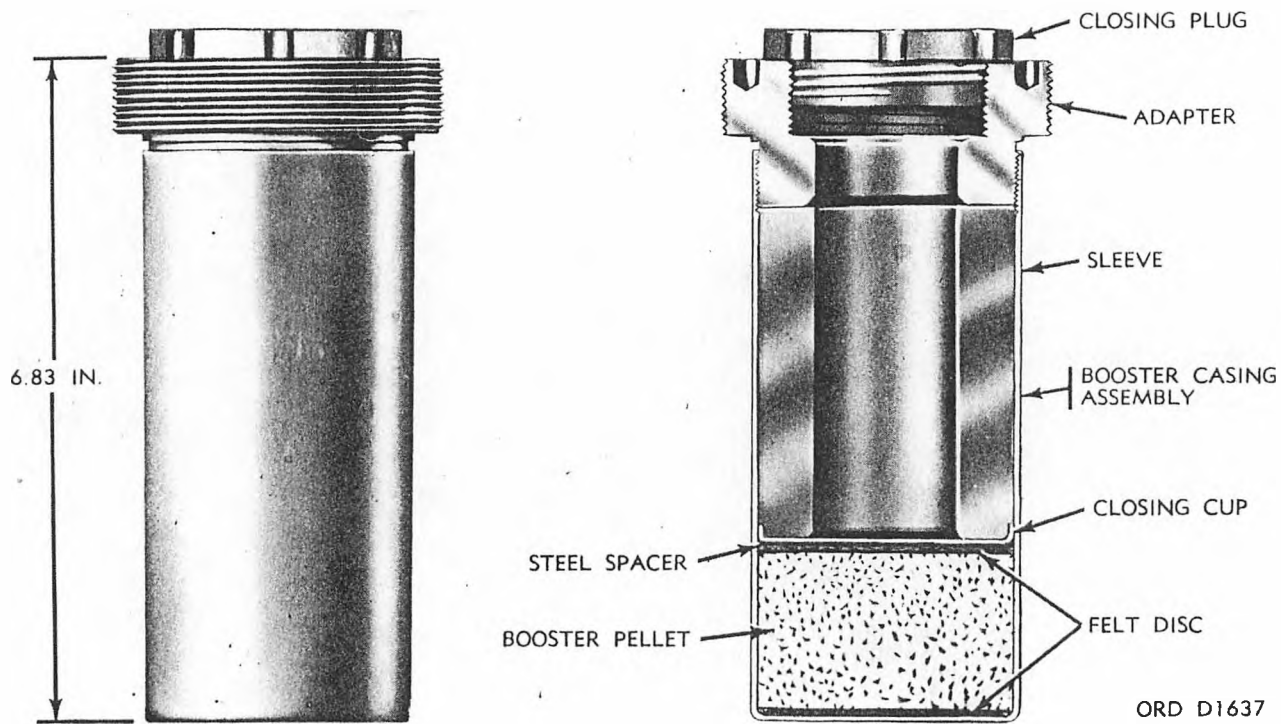
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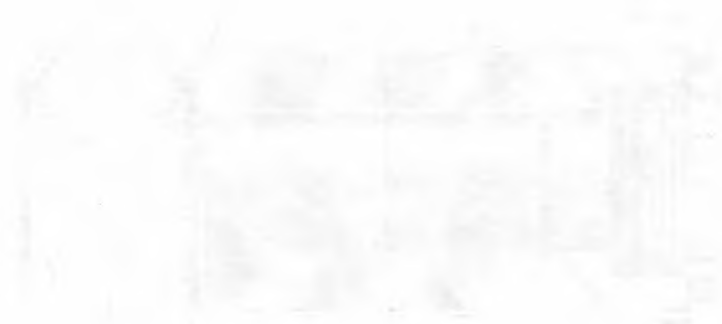
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## NOMENCLATURE

97a	Tow & Push Attachment Assy, f/Demo. Kit, M157, MPTS
102a	- Rocket, 2.75" Complete, XM151
102b	Warhead, Rocket, 2.75" HE, XM151
103a	Rocket, w/Warhead Assy, 66mm
106a	Wrench, Arming, M26
109a	Booster, M125A1
112a	Cap, Blasting, Spec Electric, Assy, M6
116a	Cord, Detonating
117a	Dynamite
118b	Firing Device, Demolition, M1
118c	Firing Device, M3 (Pull Release Type)
121a	Fuze, PD, M503A2
122a	Fuze, Hand Grenade
125a	Fuze, MT, M564
125b	Fuze, MT, M564
126a	Fuze, MT, M565
127a	Fuze, Rocket, M412
128a	Fuze, Rocket, M423
128b	Fuze, Rocket, M427
132a	Fuze, PI, BD, M509A2
132b	Fuze, PI, BD, M530A1
134a	Fuze, BD, M534A1
136a	Igniter, Time Blasting, Fuze, Weatherproof, M60, Assy
137a	Cartridge, Illum, 60mm, M83A3
139a	Cartridge, Illum, 81mm, M301A2
141a	Projectile, Illum, 155mm, M485
142a	Projectile, Illum, 4.2", M335A1



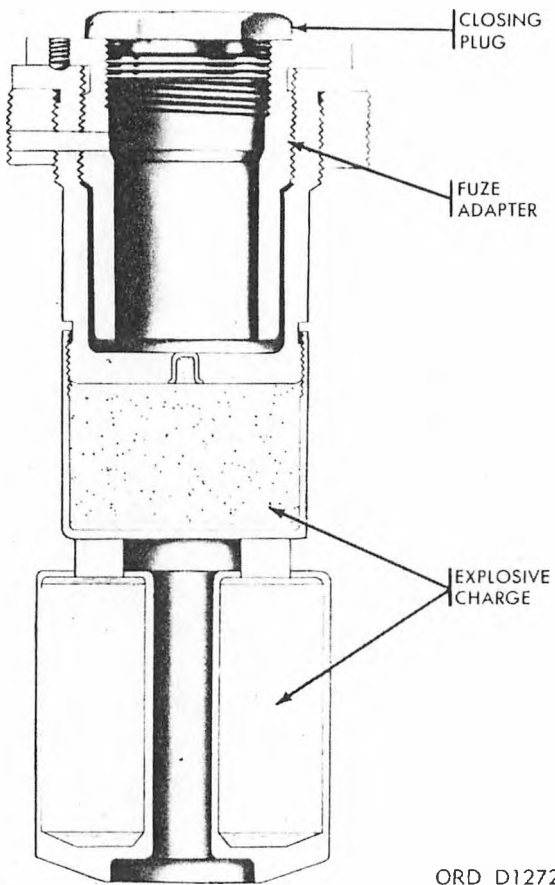
ADAPTER BOOSTER, T15E7



qf



ADAPTER BOOSTER,



ORD D1272A

T46E1

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3. The third part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom.

10485. ADAPTER, BOOSTER, T45E9, MPTS

Consists of three component parts: Casing booster is a steel cup 5.570" long and 2.86" in diameter, with a .073" thick bottom. Top of cup has a 2.7504UNS-1BG inside thread. Material: Steel cold rolled carbon strip, temper 4 or 5 ASTM A109, or steel sheet special killed, cold rolled ASTM A365. Adapter is 1.85" long and 3.5" in diameter. Outside dimension has 3.500-12UNS-1A" thread. Inside dimension has 2.000-12UNS-1B thread and a hole thru the balance of length of 1.78" Material: Carbon steel bar hot rolled, cold finished 1015-1035 or 1117-1120, ASTM A107 or ASTM A108, or carbon steel bar hot rolled, C1025 or C1035 Spec QQ-S-631 or ASTM A107. If parts are forged, forging shall be in accordance with Spec. MIL-S-13048. Protective finish on casing booster and adapter is: Finish No. 1.9.2.3. or 1.1.2.3 of MIL-STD-171. Sleeve is an aluminum alloy tube, 3.30" long, O.D. of 2.67" and I.D. of 1.78", with one end having the O.D. reduced to 2.55" for a distance of .30" from the end. Material: Aluminum alloy extruded 6061, 6062, or 6063 temper T6 or T62 ASTM B221. Alternative materials: Aluminum alloy drawn seamless tube, 6061 or 6062 temper T6 ASTM B210 or Aluminum alloy bar (hollow) 6061, 6062, or 6063 temper T6 ASTM B221.

10488. ADAPTER, BOOSTER, T46E4, MPTS

Consists of six component parts: Adapter Fuze is 2.78" long and approx. 1.85" diameter with a flange 3.00" diameter. Flange is .19" thick with two wrench slots .31" wide located 180 degrees apart on edge of flange. Flange has 1/4" hole thread 1/4-28UNF-1B, located 90 degrees from wrench slots. Part has hole through center (lengthwise) 1.35" diameter on opposite end from flange for a depth of 1.48", and the balance of I.D. has threads 1.500-12-UNF-1B. Outside has threads 2.000-12UNS-1A on outside under flange. Adapter is cup shaped 2.97" long and approx. 2.30" O.D. with a flange .19" thick with a 3.35" diameter. Adapter has bottom .295" thick with a hole through center of bottom .172" with a .22" diameter countersink on outside area. Part has threads 2.000-12UNS-1B on inside of flange end, and threads 2.500-12UNS-1A on outside under flange and threads 2.200-24-UNS-1A on outside of part opposite end from flange. Materials for adapter fuze and adapter: Carbon steel hot rolled carbon steel, special quality bar 1025-1035, ASTM A107, forged, Class E ASTM A235. Adapter ring is .87" long with outside thread 3.500-12UNS-1A and inside thread 2.500-12UNS-1B, with two holes wrench .281" diameter .20" deep 180 degrees apart on face of ring. Material: Steel bar cold finished, Grade 1117, 1118, Spec ASTM A108. Alternative material: Steel round tubing, seamless, Grade 1118 or 1020, Spec. QQ-T-830. Casing booster is cup shaped 1.95" long and 2.153" I.D. Bottom and side thickness .075", 2.200-24-UNS-1B threads .56" minimum. Material: Steel cold rolled carbon



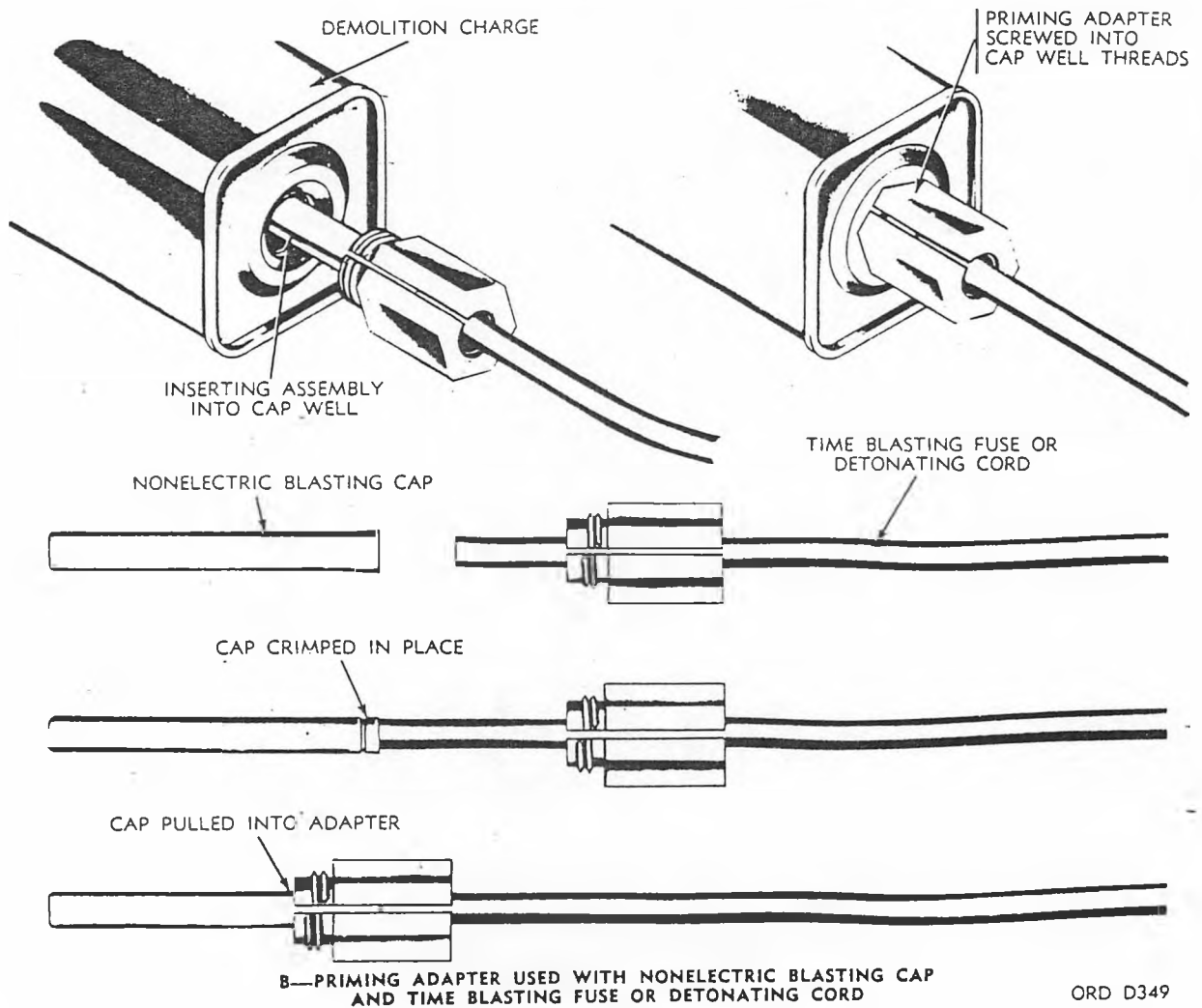
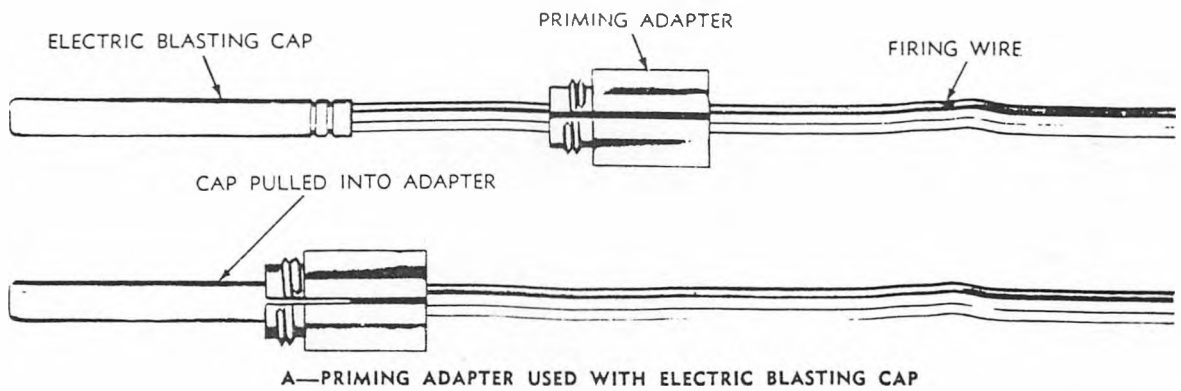
strip, Temper No. 4 or 5 Finish No. 3, Spec. ASTM A109. Alternative material: Steel hot rolled, carbon strip commercial quality pickled, Spec ASTM A425. (Bright finish for electroplating). Protective finish for adapter fuze. Adapter, adapter ring, and casing booster is Finish No. 1.1.2.3 or 1.9.2.3 or MIL-STD-171. Cup booster is cup shaped with a hollow tube extended up in center to top of cup. Cup is 2.98" overall length with inside dimension on large portion of 2.66". Inside dimension of tube inside of cup is .575". Counterbore on base of cup 1.40" diameter and .106" deep. Material: Aluminum alloy, bar extruded, Grade 1100, Temper O, ASTM B221. Alternative material: Aluminum impact extrusion alloy 1100 Spec MIL-A-12545. Screw set slotted cone point, .187" long, .045" width of slot. 1/2-28UNF-2A thread. Set screw shall conform to type II. Style 2, Spec FF-S-Z10. Material: Carbon steel, 1045 or C1144, Type 2 2H. ASTM A 194. Protective finish. Finish No. 1.1.1.3 or 1.9.1.3 or MIL-STD-171. Assembly of adapter fuze to adapter and adapter ring shall be made to meet torque requirements and fastened with set screw in adapter fuze. Manufacturer must have adequate screw machine capability and plating facilities in addition to presses for drawing or extruding casing booster and cup booster.

10042. ADAPTER, PRIMING M1A4

Hexagon shape, 1.1 inch long x .63 inch across flats, .23 inch inside diameter center bored to .44" ID x .6" D, 9/16 NC thread on one end, material, plastic, cellulose, acetate butynate, molded, type I, Class H2, MH, or type II, Class H4, H2, MH or type III, Class H2, Spec-L-P-349. Firms bidding this item should have a technical staff familiar with molding plastic components of this type. This adapter is not considered difficult to manufacture to applicable specifications.

09933. ADAPTER, SPECIAL PURPOSE, ELECTRICAL

Adapter shape: truncated cone. Approximate dimensions: length, 3.12" max; diameter at large end, 1.5"; diameter at small end, 1.125". Major components: Connector, Plug, equal to MS3017A-14S-5S with back shell removed, approved source - Amphenol Electronics Corporation, Chicago, Illinois; Connector Plug, equal to MS3107A-24-7P with back shell removed, may be procured from Amphenol Electronics Corporation, Chicago, Illinois, or Bendix Corporation Sidney, New York; Nut, Electrical Adapter, hexagonal shaped, aluminum alloy 2017-T4. Plug connectors are connected by wiring which is potted in sealing compound, Specification MIL-S-8516. Acceptance provisions include good workmanship as well as continuity and insulation resistance tests. Electrical test instruments required include Megohmmeter No. 1862-B by General Radio Company



ORD D349

ADAPTER, PRIMING, M1A4



Cambridge 39, Massachusetts, or equivalent, and Model No. 502 Milliohmeter by Keithley Instruments, Inc., Cleveland, Ohio or equivalent. Test circuit diagram and layout drawings provided. This item is not considered difficult to manufacture in accordance with applicable specifications.

10062. ADHESIVE, PASTE

Manufactured in accordance with Specification MIL-A-374A, as amended by ECO 27693-S ANR. This is not considered to be difficult to manufacture to applicable military specifications.

11109. ADAPTER, GRENADE PROJECTION, M1A2

Is made up of a stabilizer assembly, retaining arming clip, cup retainer, short claws and long claws, and clip arming. The stabilizer assembly is made of a fin, plug and tube. The tube is made of steel, carbon, seamless mechanical tubing condition SR ASTM A519, one end flared, ID .868", .049" thick and a length of 4.26". The plug is made of steel, carbon, round, cold finished, grade 1018 to 1025 or 1118 ASTM A108 has a diameter of .95" and length .45", which is brazed to the tube. The Fin is made of steel carbon, sheet cold rolled commercial quality ASTM A366, width 1" x diameter of 2.16", one of three alternate materials and is spot welded to the flared end of the tube. Clip arming is made of steel strip, cold rolled, temper No. 3 or 4, finish No. 1 ASTM A109 or alternate material steel, sheet cold rolled, ASTM A366, thickness .070" length. Retainer arming clip is made of steel, sheet cold-rolled, annealed, skin passed, (temper rolled) grade 1055, Specification QQ-S-700, .0418" thick, width .39" length 1.72", after forming one part will be heat treated C60-C64 Rockwell and the rest from C40 - C64. Claw, Short (2) is made of steel, sheet, cold rolled, annealed, skin passed, (temper rolled) Grade 1055 to 1095 Specification QQ-S-700 heat treat after forming to Rockwell C48-C54 thickness .0418" length 2.56" W .39" Claw, Long is made of steel, sheet, cold-rolled, annealed, skin passed (temper-rolled) grade 1055 to 1095 Specification QQ-S-700 heat treatment after forming to Rockwell C48 - C54 thickness .0418" length 3.36" width .39". Cup Retainer is made of steel, cold rolled, temper No. 3 or 4, finish No. 1, ASTM A109 (alternate material: steel, sheet, cold-rolled, ASTM A366) thickness .0179" ID. 1" flared sides .62" H. The claws go through the cup and are attached to the stabilizer assembly by three screws. Final protective finish, MIL-ST-171, Finish No. 5.1.1 + 20.1 or 5.1.1 + 20.2 olive drab No. XM34087 to all surfaces except inside of stabilizer tube. The adapter, grenade, projection M1A2 is considered not difficult to produce.

09927. ARMING DEVICE, CUP AND AIRCHUTE ASSEMBLY

Consisting of cup and airchute assembly. Cap, approx 1.25" D x 1.75" L, generally machined from bar stock. Various diameters, counterbores and drilled holes, material steel bar. B1112 or B1113, Airchutes assembly approx 9" D, fabricated from nylon tape, 1" W, Type III nylon cord and nylon thread. This item is not considered difficult to manufacture.

09928. ARMING DEVICE RELEASE AND METAL PARTS ASSEMBLY

Approx 2.5" D x 2.75" L consists of Protector, Clip, Retaining and Strap, Retaining, Protector, "Parabola Shape" 2.5" D x 2.75" L x approx .03" thick wall, fabricated in two half sections. Material polycarbonate resin uncolored, clear molding plastic. Retaining Strap 6.14" L x 3/8" W x .03" thick with slot and holes material, 301 or 302 stainless steel, Retaining Clip Assemblies on outside of protector fabricated in two halves material, 301 stainless steel approximately .02" thick. This item is not considered difficult to produce in accordance with applicable specifications.

11278. ARMING WIRE CLIP

This is a single steel part made with a progressive die punch press or four slide forming machine. Material is condition A, corrosion resistant, 17-7 precipitation hardened steel described by Military Spec MIL-S-250-3C. Size in the flat before forming is 2 13/64" x 7/16" x .062" thick. After forming, the part is heat treated with an argon or helium atmosphere in a carbon and nitrogen free environment to Rockwell hardness C45 per applicable specification and drawing. Deburring and removal of corrosion is likewise specified. Clip performance tests are also required. The clip is not considered difficult to make.

10036. BAG, CANVAS CARRYING, DEMOLITION EQUIPMENT

Assembly is approximately 9 1/4" L x 10 1/2" high x 4" wide with front pocket, gusset sides, front flap, support webbing, body and carrying straps, material, cotton duck, type II, 9.85 oz. Spec CCC-C-419, cotton webbing, types I, II, & III, Spec MIL-W-530, all material water-repellant and mildew resistant, standard hardware, buckles, snap fasteners, rivets, end clips, eyelets and washers, material, brass-black oxide finish. Manufacturing firms bidding this item must be familiar with Ordnance standards for methods of fabrication and assembly of duck and related materials. This item is not considered difficult to produce to Ordnance Specifications.

10248. BASE PLUG, 155MM SHELL

Base Plug, 155mm Shell, 5.38" large D x .47" length to 4.6325" D for .55" L overall L 1.02", 9 degree taper on 5.38" D, material, steel, Grade 1045 ASTM Specification A108-61T or Carbon Billets for forging ASTM A273-58T, Grain Flow of material must be perpendicular to centerline of part, minimum Yield Strength 68,000 PSI and 90,000 minimum tensile strength PSI with 15 percent elongation, protective finish phosphate coat and paint. This item is considered somewhat difficult to manufacture to meet applicable specifications.

10065. BLASTING MACHINE, HANDLE OPERATED, METAL CASE, 10 CAP CAPACITY

Used in demolition operations, This is essentially a manually operated generator capable of providing ample voltage for the detonation of ten /10/ electric blasting caps or electric squibs in series. The blasting machine shall deliver a minimum of 1.5 amperes DC through a total external resistance of 52 ohms for a period of more than 10 milliseconds. The generator shall be inclosed in a rugged, durable, waterproof metal case with a carrying strap. Blasting machine size: height 8 1/2" maximum (6 1/4" max w/o handles), width, 4 5/8" maximum, depth, 3 5/8" maximum, weight, 6 lbs maximum. Specific standards are required for storage and operating temperatures, life cycle, humidity conditions, vibration, shock, dielectric strength, and water submersion. Detailed information on this item is contained in MIL-B-60410 dated 21 Sep 66. This item is not considered difficult to manufacture for firms manufacturing electrical instruments of this type; however, it should be noted that the specifications regarding functioning and testing are very definitive in nature.

09926. BODY AND CONE ASSEMBLY

Approximately 6.6" long x 2.57" diameter, Body, one piece design 6.62" long x 2.57" diameter extending 4.11" then tapered to 1" diameter,



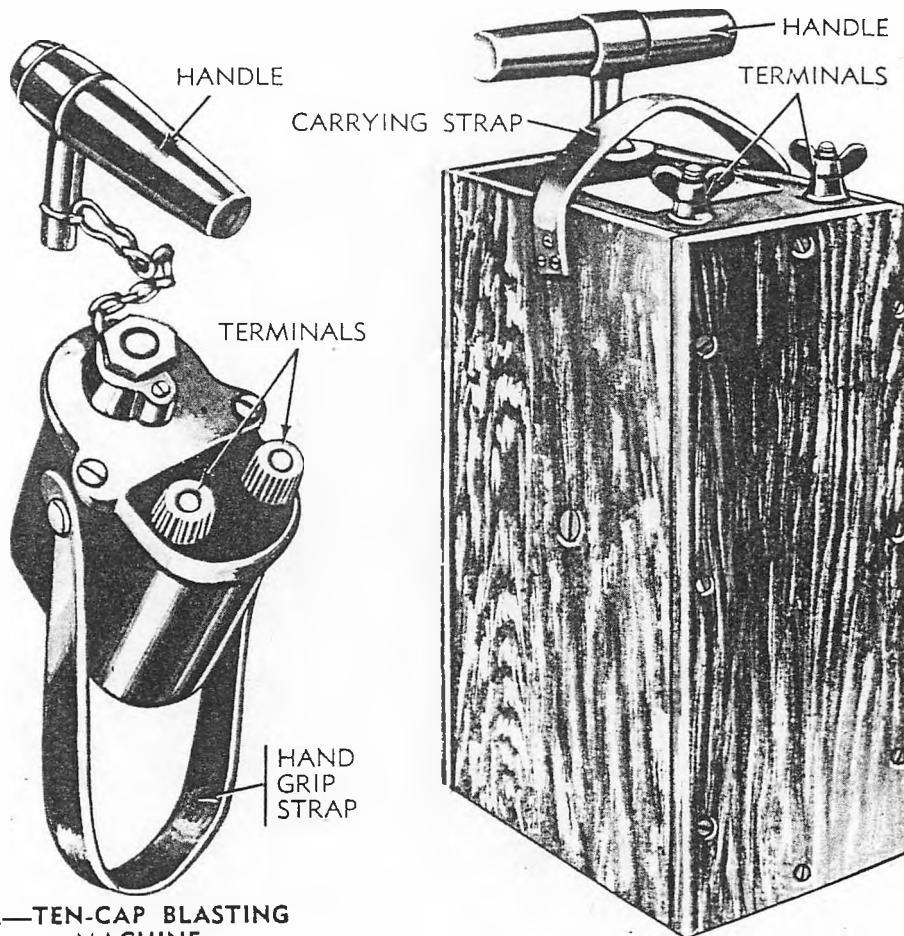


ORD K2292

BAG, CANVAS CARRYING, DEMOLITION KIT

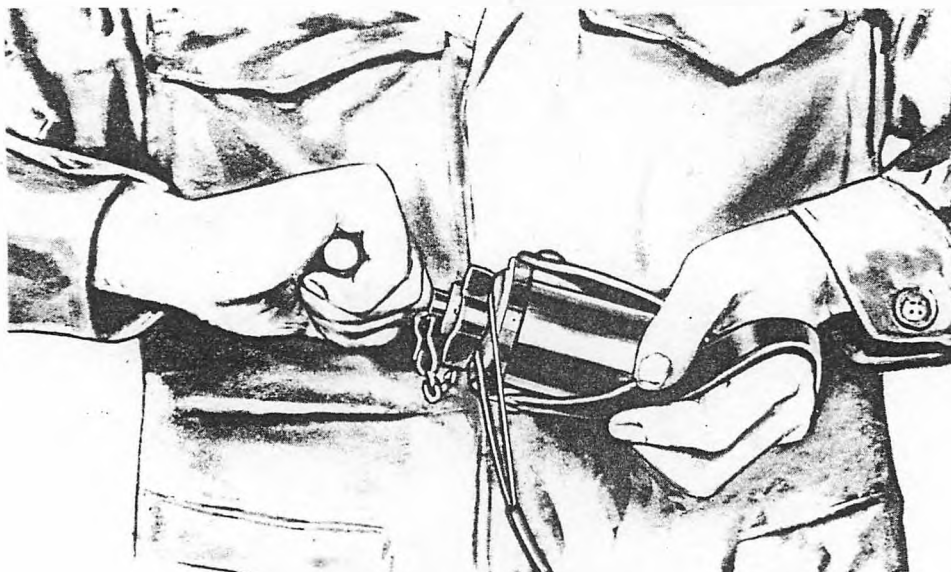






A—TEN-CAP BLASTING MACHINE

B—FIFTY-CAP BLASTING MACHINE



C—METHOD OF USING 10-CAP BLASTING MACHINES

ORD D350A



extending 1" long, wall thickness .04" to approximately .08" fabricated by impact extrusion with some machining required on OD and ID with ID thread small end, material, Aluminum alloy 1100 or 6061. Cone 2.5" diameter x 3.25" long "Cone Shape" approximately .03" wall thickness material copper strip cold rolled, soft annealed, generally fabricated by deep drawing. Cone assembled in body by shrink fit and dimpled six places. Sealant required between cone and body. This item is somewhat difficult to manufacture in accordance with applicable specifications.

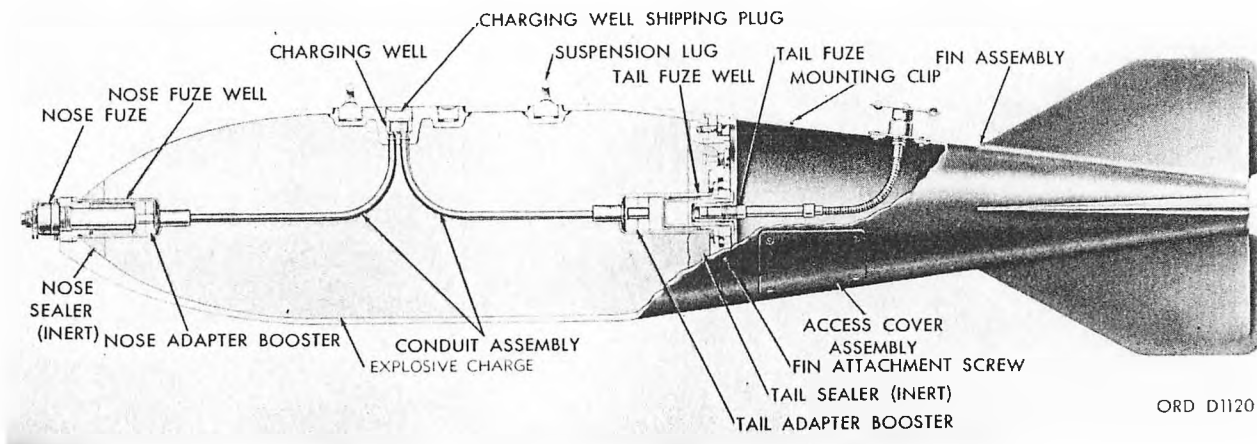
10493. BOMB, LEAFLET, 750 POUND, M129E2, MPTS

Approximately 70" L x 16" outside diameter with upper and lower body halves, Bulkhead, Fore, upper and lower halves, Bulkhead, Aft, two each, Fuze Well assembly, Lug Plate assembly and Base Protector assembly, Body Booster, Nose Ring, Nose rotector and Closing lug. Additional hardware, Tie Bar, eight each, Body Gasket two each, Aft Bulkhead Gaskets, two each, Nose Gasket 1 each, Stop Plates, eight each, Shipping Plug, 1 each, nuts, self-locking, hexagon, six each, Nose Ring, one each, Nose Seal, two each, Springs, ten each, Flat Washers, four each, various screws eighty-four each, rivets twenty-four each, and instruction tag. Material: Glass fiber reinforced polyester resin, approximately 30 per cent glass and 70 per cent resin mixture, multi-ply layup and curing in matched heated metal male and female molds, materials must meet extensive physical properties, specific gravity, Barcol hardness, Izod impact strength and water absorption, construction procedure is controlled by drawings and specifications: Contractor must provide and maintain an effective quality assurance system in accordance with applicable specifications. This item is considered very difficult to manufacture to meet applicable drawings and specifications.

10535. BOMB, 750 POUND, M117, MPTS

This assembly is approximately 51" long and is composed of a body, 7 forgings, 2 conduits, 12 screws, 3 plastic plugs, 6 machine parts, and various sheet parts. The Body is formed from a 16" OD steel tubing, (MIL-B-2530 or MIL-B-2521) and is machined (only at the nose and tail) to a finished length of 46". The steel forgings are the boss insert, combination boss insert, flange ring, inner ring, base plug, nose plug, and tail closing plug. The first two forgings, Boss Insert and Combination Boss Insert, weighing 2 pounds and 11 pounds respectively, are drilled and tapped after being welded to the side of the bomb body. The largest forging (approximately 38 pounds) is the Flange Ring, which is machined to a finished outside diameter of 14.34", has 12 tapped holes. The conduits are the Nose Conduit and Tail Conduit .625" outside diameter carbon steel tubing. The machined parts are an Adapter-Booster Bushing, A Fuze Well Ring, two Fuze Well Nuts, and Two Fuze Well Adapters. The last one Fuze Well Adapter being made from a carbon steel hex bar 1" across the flats and having various inside diameters from .56" up to .68".





BOMB, 750 POUND, M117, MPTS



The other machined parts are larger in periphery. The sheet parts include two Gaskets and three sheet steel parts with walls from .055" to .125". The making of this assembly requires a very capable administrative organization assisted by broad technical staffs.

10536. BOX, PACKING, AMMUNITION FOR 90MM, FIBER CONTAINER, M53A4

Fiber container M53A4, wood, grade A, type 3, class 1. Approximately 43-3/8" long x 13" wide x 8-5/32" high with required hardware. For 81MM Mortar, in fiber container M252A3, wood, grade A, type II, class 2. Approximately 25-11/16" long x 13-9/16" wide x 6-11/32" high. For 81MM Mortar, in fiber container M37A5, wood, class A, type II, Class 2. Approximately 28" x 9-11/16" wide x 6-15/32" high. For 81MM Mortar, in fiber container M36A5, wood, class A, Type II, Class 2. Approximately 17-3/4" long x 9-11/16" wide x 10-15/32" high. These items are not considered difficult to manufacture to Government Specifications.

01084. BOX, PACKING, AMMUNITION f/FUZE, CP, M78A1 w/BOOSTER, M25

Approximately 13-13/16" x 5-9/16" x 5-5/8" inside dimensions, tolerance on inside dimensions is +1/8". Overall outside dimensions 16-15/16" x 7-1/8" x 8-7/32". Type I, Class 2, Specification MIL-B-2427C, dated 26 October 1962, with Engineering Order Number 31031-S, dated 21 May 1964. Boxes are wood with hasp and hinge hardware of steel and two cover cleats. Manufacturing firms bidding this item should have the technical knowledge required in manufacturing ammunition packing boxes in accordance with Government specifications, however the item is not considered difficult to produce.

10211. BOX, PACKING, AMMUNITION f/HAND GRENADES IN FIBER CONTAINER, M41A2

Will be Type II, Class 2, Grade A, 14-5/8" long x 14-5/8" wide x 5-5/16" high. Box to be manufactured in accordance with Specification MIL-B-2427C, Box, Ammunition, Packing, Wood, Nailed, dated 26 October 1962, with EO-PA-31031-S, dated 21 May 1964 and applicable hardware drawings. This item is not considered difficult to manufacture to applicable specifications.

01202. BOX, PACKING, AMMUNITION f/MINE, AT, HE, HEAVY, M15

Are to be made of wood approximately 14-7/8" x 13-1/2" x 5-1/8". plus 1/8" tolerance. Inside dimensions, type II, Class 2, in accordance with Specification MIL-B-2427C, dated 26 October 1962, with Engineering Order Number 31031-S, dated 21 May 1964. Boxes are wood with steel hasp and hinge hardware with supports, shelves and partitions. Manufacturing firms bidding this item should have



the technical knowledge required in manufacturing ammunition packing boxes in accordance with Government specifications. This box is not considered difficult to manufacture.

00790. BOX, PACKING, WOOD f/CONTAINER, M209A1, 81MM MORTAR

Approximately 27 7/16" long x 13 9/16" wide x 6 11/32" high, Grade A, Type II, Class 2, Spec MIL-B-2427C, top opening, assembled with (1) swivel assembly, (1) hasp, (2) hinges, (2) Jute or Polyethylene rope handles Spec MIL-B-2427C, (3) fillers-fiberboard, strapping furnished in coils, (2) strap connectors, (1) car seal. Manufacturing firms bidding this item should have the technical knowledge required in manufacturing ammunition packing boxes. This item is not considered difficult to produce to applicable specifications.

10561. BOX, PACKING, WOOD f/CONTAINER, M306, 76MM

Approximately 39 5/16" long x 11 1/16" wide x 7 5/32" high, Grade A, Type II, Class 2, Spec MIL-B-2427C, top opening assembled with (1) swivel assembly, (1) hasp, (2) hinges, (2) Jute or Polyethylene rope handles Spec MIL-B-2427C, (3) end fillers, (3) side fillers, (3) top fillers, all fillers are fiberboard, strapping furnished in coils, (2) strap connectors (1) car seal. Manufacturing firms bidding this item should have the technical knowledge required in manufacturing ammunition packing boxes. This item is not considered difficult to produce to applicable specifications.

00815. BOX, PACKING, WOOD f/CONTAINER, T73E1, 90MM

Approximately 39 15/16" long x 12 7/8" wide x 7 3/8" high, Grade A, Type III, Class I, Spec MIL-B-2427C, end opening, assembled with (2) washers, (1) carriage bolt 38 3/4" long x 7/16" OD, (1) thumb nut, (3) filler 11 1/4" long x 5 5/8" wide x 1/16" thick, composition board, car seals, strapping furnished in coils. Manufacturing firms bidding this item should have the technical knowledge required in manufacturing ammunition packing boxes. This item is not considered difficult to produce to applicable specifications.

00835. BOX, PACKING, WOOD f/CONTAINER FIBER, M184A2

Approximately 42 7/16" long x 12 15/16" wide x 8 3/32" high, Grade A Type II, Class 1, Specification MIL-B-2427, end opening, assembled with two (2) washers, one (1) Carriage bolt approximately 39" long x 7/16" Outer Diameter, one (1) thumb nut, two handles, Jute rope, 5/8" diameter x 20" long. Type I or II, Spec T-R-592. Manufacturing firms bidding this item should have the technical knowledge required in manufacturing ammunition packing boxes. This item is not considered difficult to produce to applicable specification.

Boxes are procured infrequently by this Agency. They are procured largely by the various Government-Owned, Contractor-Operated plants. (See list in back of book.)

CABLE ASSEMBLY, FUZE CONTROL

10188. M71  
10537. M72  
10574. M73

Basically two (2) electrical connectors joined by two (2) cordages of four (4) conductors each. Overall length: 33.4 inches. Major components: Fuze Plug Assembly; cylindrically shaped; length, 1.846 inches; diameter, .1437 inch. Assembly consists of electrical contacts, spacers and one end of cordage molded and bonded in silicone rubber, Spec MIL-R-003065, Type T, Class TA, F3, color - red, white, or clear. Contact made of brass, Spec QQ-B-626, Composition 22, Half-Hard, with 0.0005 inch minimum silver plate, Spec QQ-S-265, or with 0.0005 inch minimum nickel plate, Spec MIL-P-6859, Type I, Class B. Alternate material: Stainless steel, Class 303, Spec QQ-S-763, with no plating required. Cordage consists of four (4) stranded conductors of #22 AWG wire, MIL-W-16878, insulator with silicone rubber, Spec MIL-R-003065, Type T, Class TA Suffix F3, color - white. Receptacle, Molded: cylindrically shaped with various shoulders and cavities: length 1.125 inches; diameter 1.843 inches; material, plastic per Spec MIL-M-14, Type MDG. Advisory source of supply: ACME Resin Co., Forest Park, Ill., Resin No. 1-501 or substantial equal. Receptacle contains sealing disc, spring clip, silver plated contact rings, and end of cordage set in potting compound. Seal, Bottom: cylindrically shaped; length 1.375 inches; diameter, 1.59 inches; molded rubber, Spec MIL-R-003065, rubber, color red, Type T, Class TA, Suffixes F3 and Z1. Acceptance tests on item include insulation resistance, continuity, pull, extreme temperature, temperature cycling, salt spray, humidity, salt immersion, accelerated aging, fungus resistance, and strength of spring clip. Manufacturing firms bidding on this item will require a technical staff of electrical and tool engineers with experience in the use of silicone rubber, potting compounds and plastics. Item is considered difficult to manufacture in accordance with applicable specifications.

10490. CABLE ASSEMBLY, SPECIAL PURPOSE ELECTRICAL (NAVY) 8840363

This item is a Special Purpose Cable Assembly for Navy Applications, interconnecting the CBU-12/A, 3A/A, 9A/A Bomb Dispensers and applicable Aircraft type Bombs. The major components consist of: Connector, Electrical, Receptacle MS 310/A 10 SL-4P with Clamp, Electric MS 3057-4B and Bushing, Telescoping AN 3420-4A-Connector, Electric, Plug, Quick Disconnect MS 3107A-145-5S with Clamp, Electric MS 3057-6B, Bushing, Telescoping AN 3420-4A. - Interconnecting Cable 2 wire, 28V, total cable length, including the 2 connectors is approximately 46.1 inches. Insulation sleeving, Electrical, Flexible per specification MIL-W-7444 - Wire, 600V Copper - wire size, AN 16 per specification

MIL-W-5086 or Type B-16 per Specification MIL-W-16878/1. Pot electrical leads to connectors using sealing compound per specification MIL-S-8516. Quality Assurance shall be in accordance with requirements of applicable data package. This item is not considered difficult to manufacture.

01441. CAP, BLASTING, ELECTRIC, INERT, M6, ASSEMBLY

(3) components, 2.29 inches long x .242 inch OD, Cup, 2.29 inches long x .242 inch OD x .222 inch ID at open end, .220 inch ID @ base, 102 inch wall thickness of closed end, material, Aluminum alloy, sheet, temper O Spec QQ-A-318, Wire, lead (2 ea) .0253 inch dia x 12 ft long, material, copper soft, (commercial) enameled, double cotton covered, Charge, inert, composition, Filler B, Spec PA-PD-796: OR: Cap, Blasting, Electric, Inert, M6, Assy, (ALTERNATIVE) 2.35 inches max long x .242 inch OD, (30 components, Cup, same as above, Wire, lead, (2 ea) 145 inches long, type S, AWG22, condition soft, tin coated, Spec QQ-W-343 insulated with approx .01 inch thick ethyl cellulose, plastic, type I, class optional, Spec MIL-P-22985, optional wire insulation, .006 inch nominal thickness of nylon (2Y TEL 34) Rubber plug Seal, to be molded around lead wires, 1 inch long x .219 inch OD, material, rubber, molded, class RS8 or RS9, Spec MIL-R-3065, Plug assembly to be inserted in empty cup and crimped 360 degrees in (2) places. Two (2) 1/8 inch diameter holes drilled thru cup wall in either Cap. This item is not considered difficult to produce to applicable specifications.

09876. CAP, BLASTING, NON-ELECTRICAL, INERT, M7, ASSEMBLY

2.35" long x .26" max diameter, (3) components, Cup, 2.35" long .239" diameter at base, opposite end flared to .26" max, .215" ID at base, .02" wall thickness, material Al alloy, sheet, temper O, Spec QQ-A-318, Ferrule, .155" long x .2185" OD, ID tapered from .204" to .194" at bottom, .02" base wall thickness, Charge, Inert Comp, Filler E, Spec PA-PD-796, after assembly drill two (2) 1/8" holes thru cup walls. This item is not considered difficult to produce to applicable specifications.

01845. CASE, CARTRIDGE, 40MM, M118, MPTS

Case, is 1.817" L x 1.624" OD with varying wall thickness from .062" to .030". Case is cup shaped with internal protrusion .845" D x .557" H in base section with six .083" D tapered holes equally spaced around the protrusion into the primer pocket which is machined in the base end; also a rim 1.719" D x .080" W is machined on the base end. Material - aluminum alloy, 6066 chemical composition, paragraph 3.1, Specification QQ-A-200/10, after forming final tensile properties to be in accordance with temper T6 of table 11 of specification QQ-A-200/10. Case is manufactured from blanked out disc

1.75" D x .625" thick. Disc is partially formed, precision drilled, followed by a series of forming, annealing and drawing operations, then finished machined, heat treated to T4 and T6, surface treatment anodize. Base of case is stamped with letters and figures approx .12" H x .01" deep, indicating caliber, designation, lot number and date of manufacture, month and year. Alternate marking - mark with .125" H figures using black No. 37038, FED-STD-595, stencil ink, Specification TT-I-558. Protective finish No. 7.2.2 of MIL-STD-171, color shall be no lighter than green 34151 or darker than green 34079, FED-STD-595, MIL-STD-795. Plug Base is .4995" D x .28" L with precision bore, counterbore and countersink. Material - aluminum alloy, bar, 2024-T4, Specification QQ-A-200/3a or aluminum alloy bar, 2024-T4, Specification ASTM-B211. Protective finish, anodize. Color shall be same as case. Cup, Powder, Charge is cup shaped, .406" D x .365" H x .0055" wall thickness with flared mouth to .490" D. Material - brass strip, annealed, No. 6, Specification ASTM-B36. Finished cartridge case must withstand a series of rigid tests and contractor must maintain an effective quality assurance system. This item is considered very difficult to produce to meet applicable specifications by mass production methods.

09990. CASE, CARTRIDGE, 40MM, M169E2

2.09" L x 1.624" to 1.714" D with varying wall thickness from .032" to .062", with a web in approx center of case which is cup shape, approx .136" thick with 6 each .108" D tapered holes equally spaced around the web inside of case. This material is aluminum alloy 6066 chemical comp., par. 3.1, Spec MIL-A-25493. This item has metal stamping in base, uses Gothic capital letters to a minimum depth of .010" raised material which shall not exceed .002. The letter to identify item by nomenclature, manufacturer's code letter, lot number and year of manufacture. Protective Finish No. 4.3 followed by Finish No. 7.2.2 of MIL-STD-171 Dechromate Seal, minimum 5 percent solution. Color must not be lighter than Green No. 34151 or darker than Green No. 34079 of Federal Std No. 595. Plug Base, .473" thick x 1.053" D with a primer pocket .127" deep x .209" with flash hole .108" through plug. Material, aluminum alloy, 7075-T6, Spec QQ-A-277, protective finish same as case cartridge. Disc Closing, .010" thick x .66" D of material brass alloy No. 1, Spec ASTM-B-3661. Finished cartridge case must withstand a hardness test near the mouth and base of the case, method of test, 243 of Federal Standard No. 151, and corrosion resistance shall be tested in accordance with Federal Standard No. 151, method 811.1. Contractor must provide and maintain an effective Quality Assurance System. This item is considered very difficult to manufacture to meet applicable specifications by mass production methods.

10220. CASE, CARTRIDGE, 75MM, M9A1E1

One-piece design, material aluminum alloy, 1100 F, Spec ASTM-B211, manufactured from a spherical disc, finished part approx 7.25" L x 3.43" OD at base to 2.97" ID at mouth. Wall thickness is .07". Body is tapered and necked down, machined primer hole and base, chemical film finish, Spec MIL-C-5541, to withstand salt spray test. Manufacturing firms bidding on this item require competent technical staff of engineers, metallurgists and tool design engineers to design, fabricate and maintain tools for mass production of this item. This cartridge case is considered difficult to produce to applicable specifications.

10144. CASE, CARTRIDGE, 76MM, M171E1

One piece design, manufactured from a spheroidized disc, deep drawn, approximately 22.83" long by 3.896" OD at base to 2.998" ID at mouth, wall thickness varies from .09" to .051", body, tapered and necked down, completely heat treated, varying from Rockwell 035 at base section to RB85 maximum at mouth, material, steel, Specification MIL-S-3289, machined primer hole and base, supplementary bonderize treatment, with final baked varnish finish. This item will require government furnished facilities on hand. Manufacturing firms bidding this item require a highly competent technical staff of engineers, metallurgists, chemists and tool design engineers to design, fabricate and maintain precision tools for mass production of this item. This cartridge case is considered very difficult to produce to applicable specifications.

01958. CASE, CARTRIDGE, 76MM, M88B1

One-piece design, material, steel, Specification MIL-S-3289, manufactured from a spheroidized steel disk, deep drawn, approximately 22.8" long by 3.89 outside diameter at base to 3.08" inside diameter at mouth. Wall thickness varies from .09 to .05". Body is tapered and necked down, completely heat-treated, hardness varies from Rockwell C35 at base to a maximum of B85 at mouth, machined primer hole and base, supplementary bonderize treatment, with final baked varnish finish. This item requires government furnished facilities. Manufacturing firms bidding this item require a highly competent technical staff of engineers, metallurgists and tool design engineers to design, fabricate and maintain precision tools for mass production of this item. This cartridge case is considered very difficult to produce to applicable specifications.

02150. CASE, CARTRIDGE, 105MM, M14B4, ASSEMBLY METAL PARTS

4.211" maximum outside diameter by approximately 14.64" long, (3) components, Body, 14.142" long x 4.211" maximum outside diameter at mouth, material, steel, 1007 to 1020, cold-rolled, finish No. 1, Specification QQ-S-698 .024 - .006" thick. Body to be wrapped from a trapezoidal blank so as to provide three thickness of metal at base and one thickness at the mouth, /with overlap at mouth/. Base, 4.688" outside diameter by .55" thick with step diameter 4.344" x .372" wide and centered primer case hole .546 inside diameter with .63" counterbore, material, steel, special bar quality, ASTM, Specification A107. Collar, 4.04" outside diameter by .35" thick, formed ring, 2.56" inside diameter, with V-notch at bottom and angled lip, material, steel, special bar quality, ASTM, Specification A107. The three (3) items, phosphate coated and varnished prior to assembly. This item is extremely difficult to manufacture to applicable specifications. Manufacturing firms bidding this item will require a highly competent technical staff of engineers, metallurgists and tool design engineers to design, fabricate and maintain precision tools for mass production of this item.

02080. CASE, CARTRIDGE, M112, 90MM

One-piece design material, aluminum alloy 245, Specification QQ-A-267, or QQ-A-355, deep drawn, approx 16.29" L x 3.625" OD at mouth. Base end is upset by forging to 3.855" OD x .250 L, allowing stock for machining at step-cut end. Mouth end of case is plain, square cut. ID dimension of 3.535" pertains for length of case. Varying wall thickness range from .0699 to .0455" at mouth. Machining cylindrically if necessary between diameter limits to blend with taper. Protective finish, finish number 7.2.1 of MIL-STD-171. Dichromate seal in accordance with Table III of Specification MIL-A-8625. Manufacturing firms bidding this item require a highly competent technical staff of engineers, metallurgists and tool design engineers to design, fabricate and maintain precision tools for mass production of this item. This cartridge case is considered very difficult to produce to applicable specifications.

10411. CARTRIDGE EJECTION f/CBU-14 A/A

Consists of case cartridge approx 1" in length and D, material, aluminum alloy, impact extrusion, 1100, temper F, Spec MIL-A-12545. Alternate material, aluminum alloy bar, 1100, temper O, Spec QQ-A-225/1. Primer, electrode rivet, bridge wire. Sources: Olin Mathieson Chemical Corporation, Bermite Powder Company, Aerojet-General. Wad, approx 1.25" D x .015" thick, material, plastic sheet cellulose nitrate, Composition Optional, Spec MIL-C-15567.

Item loaded with approx 10 grains of M5 Propellant, Spec AEI-94 and nine pellets M1 propellant MIL-STD-652. This item is considered difficult to produce.

09841. CASE, CARTRIDGE, 105MM, XM148E4B1

One-piece design, manufacturing from a spheroidized steel disc, deep drawn, approx 23.975" L x 5.3302" OD at base to 4.121" ID at mouth wall thickness varies from approx .035" to .059", body tapered and necked down, completely heat-treated, varying from Rockwell C34 at base section to RB85 maximum at mouth, material, steel, Spec MIL-S-3289, machined primer hole and base, zinc plating with supplementary chromate treatment, after finish has dried, apply a thin uniform film of wax emulsion, Spec MIL-W-3688 to exterior surfaces of cartridge case, ballistic testing required for each lot. Manufacturing firms bidding this item require a highly competent technical staff of engineers, metallurgists, chemists and tool design engineers to design, fabricate and maintain precision tools for mass production of this item. This cartridge case is considered very difficult to produce to applicable specifications.

02190. CASE, CARTRIDGE, 105MM, M150B1

One-piece design, 24.31" L x 5.33" OD at base, tapered to 4.115" at mouth with varying wall thickness from .085 to .059" at mouth, threaded and counterbored, primer hole in base. Case is fabricated by a series of deep drawing and forming operations from a spheroidized steel disc, Spec MIL-S-3289. Case is fully heat-treated to Rockwell C34 at the base section to Rockwell B85 at the mouth. Protective finish, zinc plate with supplementary chromate treatment to withstand 48 hour salt spray test. Samples from each production lot require ballistic test for acceptance. Manufacturing firms bidding this item will require a competent technical staff of engineers metallurgists, chemists and tool design engineers for precision tools and gages. This item is very difficult to produce according to applicable specifications.

10599. CASE, CARTRIDGE, 106MM, M94B1

Assembled is 24" long 5.148" outside diameter at base, 2 major components, tube 23.65" long 4.698" outside diameter tapered to 4.32". Wall thickness varies from .120" to .078", steel strip is perforated with 1160 holes .312" diameter. Material: steel strip, Specification QQ-S-700, C32 Rockwell hardness at base to B90 at mouth. Tube copper brazed to head. Head 5.148" diameter, .93" long, .8074" diameter hold driller and topped for primer, annular groove machined for brazing ring. Material: steel, non-resulphurized, special bar quality, Specification ASTM-A107. This item is considered difficult to manufacture. Firms bidding this item will require a technical



staff of engineers and tool designers to produce in accordance with applicable specifications.

10223. CASE, CARTRIDGE, 165MM, M104, METAL PARTS

3.915" L x 6.36" max OD consists of 10 components, Body, 3.915" L x 6.36" OD at the mouth necks down to 6.035" D through two .25" radii approx 1.31" from the mouth, the base has no lip or extraction groove and blends with the sidewall through another .25" radius, the sidewall is perforated with 16 one inch holes, the bottom is perforated with 8 one inch holes around the periphery and one 1.4" hole at the center of a 3.06" D x .272" D depression, the mouth of the body has a 6.125-12NS-1B LH thread, wall thickness varies from .110" on the sidewall to .158" on the bottom; material, steel, strip, cold rolled, temper no. 4 in accordance with spec ASTM A109. Case, Spring, 1.615" L with a 1.755" OD flaring out to a max D of 2.253", 3 slots each 1.21" W x .14" D on the small end, two .146" W indents 180 degrees apart on the sidewall, wall thickness approx .097"; material, tubing, steel, MT 1020 or 1025, seamless, Specification QQ-T-830. Spring case is silver brazed to the inside bottom of the body, the assembly receives a protective finish of electro-deposited zinc with a supplementary chromate treatment. Handle Assembly, 5.5" max L, consisting of Handle, 5.5" L x an approx 2.5" W oval formed from .369" D stock, material, steel, cold finished in accordance with Spec ASTM A108; handle snaps into two holes in the side of Retainer, Handle, 2.546" max D x .88" D cup with 8 integral lugs spaced around the circumference of a 1.68" D hole in the bottom of the cup, wall thickness is .113", material, steel, strip, cold rolled, temper no. 4, Spec ASTM A109; a Lock Assembly, consisting of Spring, Lock, 2.69" L x .50" W, .033" thick, material, steel, strip, cold rolled, temper no. 3, Spec ASTM A109, and Clip Lock, approx .5" L x .22" W, "U" shaped piece, .054" thick, material, steel strip, cold rolled, temper no. 3 Spec, ASTM A109, is riveted one rivet to the handle retainer, all components of the handle assembly except the rivet which is cadmium plated receive an electrodeposition of zinc with a supplementary chromate treatment. Other components of the case which are purchased unassembled and shipped separately along with the handle assembly are the Retainer, Spring, 1.73" max D x .098" thick disc, material, steel, strip, cold rolled, temper no. 4, Spec ASTM A109; Spring, Primer, 1.23" L x 1.00" max D, .062" wire d, 5-3/4 coils, material, steel, spring, wire, Comp B, Spec ASTM A229; and a slotted round head brass screw, .375" L with a 4-40 UNC-2A thread. This item is considered difficult to manufacture to applicable specifications.

10429. CASE, CARTRIDGE, COMBUSTIBLE, 152MM, XM157

Manufacture consists of two parts (1) body and (2) base. Both parts are made of a rigid, molded composition consisting of nitrocellulose, Kraft (Sulfate) Woodpulp Cellulose and resin with

a no residue characteristic upon ballistic firing and stability, tensile strength, weight, density and workmanship requirements as indicated in Spec PA-PD-2616 w/EO 38602-S. Body is of cylindrical, expanding, tapered shape of .125" wall thickness from an open end of 5.9" O.D. to 6.45" with subsequent step down curvature to an opening of 3.265". Side wall may be made in one or more sections parallel to the datum diameter only. Base is of cylindrical, flat, dish shape with slight base curvature and .175" wall thickness with .68" wide wall height with an internal center hollow hub of .712" I. D. and .96" high opening, with .40" hole in top of hub. Firms bidding on this item should have a technical staff familiar with molded kraft fiber and explosive processing. This item is not considered difficult to manufacture to applicable specifications.

02350. CASE, IMPELLER, PROJECTILE BURSTER, XM175

One piece design, approx 8.6" L x 2.9" max OD, consisting of a forward end 1.193" OD with six radial fins .836" H x .144" thick and of a back end with .825" D hole, 7.57" deep, 1.7" D counter-bore, 3.2" deep and threads 7/8-28UNS, material aluminum alloy 7075-T6, QQ-A-277. Casing leak tested with an internal air pressure of 100 PSI. This item is considered difficult to produce to applicable specifications.

02268. CASE, PROJECTILE BURSTER, M8

One-piece design, approx 4.23" L x .41" ID, wall thickness near closed end .073" and wall thickness near open end about .299" with a 1.2" D flange, material, steel, hot-rolled MIL-S-11310, Alternate design, two-piece, Casting approx 3.71" L x .563" OD with .055" wall thickness, material, steel, low carbon, Spec QQ-S-698. Sleeve 1.14" L with 1.008" OD and a 1.2" D flange, longitudinal hole is machined to slip over casing and to be silver brazed to it, Alternate design to withstand 6000 PBI hydrostatic test. On all design, uncoated burster to withstand internal air pressure of 200 PSI for 60 seconds without leakage, entire cavity and part of external surface coated with phenolic baking varnish, Type 1, Spec MIL-V-12276 and remaining surface coated with corrosion preventative compound, Grade 2, Spec MIL-C-16173, varnish coating to manufacture to specifications required.

02280. CASE, PROJECTILE BURSTER, M15

One piece design, approximately 20" long x 2 3/8 diameter, 2" inside diameter with .113" final wall thickness, .27" thick closed base, and one open end finished to close tolerances, material, steel, Specification QQ-S-635 or alternate material, steel Specification MIL-S-11310. Alternate design, two-piece, Plug, 2.238" diameter

x .273" long overall, stepped to 2.01" diameter by .131" long on one end, material, steel, bar CD, Specification QQ-S-633, Sleeve, 19.96" long with 2" inside diameter bored to 2.012" for plug on one end, open end finished to close tolerance, material, steel, tubing Specification QQ-T-830, fabricate with silver brazing alloy, Specification QQ-B-00655. Each case wrapped in VCI paper 23-1/4" x 9-1/4", material, volatile corrosion inhibitor paper Type I, Class 2, Style C, Specification MIL-P-3420, tape closed, varnish and bake. Each case must withstand a helium test. Exterior is surrounded with one atmosphere of helium, a maximum of 20 microns of mercury absolute pressure maximum leak permitted is  $1 \times 10$  minus 6 cubic centimeters per second. This item is considered difficult to produce to specification requirements.

10162. CASING, BURSTER, M158

One piece design, approximately 8.23" long x 2.60" outside diameter at flanged end necking down through 2/8 and 1/4" radii at 2.844" to a .57" outside diameter for the remainder of the length of the coating, .073" wall thickness at small end with varying thickness at flanged end, interior of flanged end threaded with a 2-12NA-1B thread to 1.30" minimum effective thread, three annular grooves of .06" radius and a surface finish between 16 and 32 FMS on the outside diameter at the large end, material, aluminum alloy, 6061-T6, Specification ASTM-B211 and ASTM-B221. Burster casing must withstand an internal air pressure of 200 PSI minimum for one minute without leakage. Manufacturing firms bidding on this item will require a technical staff of engineers, metallurgists and tool design engineers to design, fabricate and maintain precision tools for production. This item is considered difficult to produce to applicable specifications.

09851. CASING, BURSTER, M161

One (1) piece design, approximately 26.6" long x 3" diameter, 2.66" inside diameter x .165" wall thickness, .36" base thickness, with one open end 3.172" outside diameter x 2 1/4" long with 2.66" inside diameter extruded, machined and ground to close tolerances. This extrusion is made from steel, plate, Specification QQ-S-635 or steel bar, Specification MIL-S-11310. Finished item is hydrostatically tested at 6400 PSI for 10 seconds without leakage or deformation, followed by a helium gas test. This test allows a maximum leakage of  $1 \times 10$  minus 6 cubic centimeters per second from the one atmosphere external pressure to the inside vacuum of 20 microns maximum of mercury absolute pressure.

Interior surfaces to be coated with phenolic baking varnish, Type I, Class A, of Specification MIL-V-12276, to be baked and to withstand 24-hour salt spray test as per Standard Federal Test Method Standard No. 141, Test Method No. 6061. On outside of casing apply corrosion preventative Grade 2, Specification MIL-C-16173 and wrap in VCI paper as per paragraph 3.6.6 of Specification MIL-I 8574. Manufacturing firms bidding on this item will require a highly competent technical staff of engineers, metallurgists and tool engineers for mass production in quantities normally required by Government. This item is considered very difficult to manufacture to Government specifications.

10566. CHARGE, DEMOLITION, SHAPED, HE, M3E2, MPTS

Consisting of 19 components and 4 assemblies. 15.4" long x 9.58" diameter base x approximately 3" diameter neck opening. Bracket, Strap carrying, (2 ea) handle shape, 2 1/8" long x 3/16" diameter center section with flared ends, material, steel, bar, cold finished. Detonator Well Assembly, (2 components) Adapter, .8" diameter x .45" long with .5625" - 12 special rolled thread, material, tin plate, type II, Class B, Grade 2, 100 lb. per base box, or alternate, steel strip temper 4. ASTM-A109. Well, 2.89" long x .299" OD x .281" ID, with .44" diameter lip, material, brass strip, alloy 1 or 2, ASTM-B36. Well & Adapter soldered together. Alternate, Well Detonator, one piece construction, formed shape, 3.22" long x .281" ID with .5625" - 12 special thread one end with .8" diameter lip, material, brass, strip alloy 1 or 2, ASTM-B36. Closing Cap assembly, consisting of above Detonator Well Assembly or alternate with Cap, Closing, 3.005" diameter x .255" high with rolled lip, 3.267" diameter and .610" center diameter hole, material, tin plate, type II, Class B, Grade 2, 107 ob. per base box, alternates, steel, strip, cold rolled temper 4, Spec OAC-PD-32 or terneplate, 8 lb. per double base box, drawing quality, Grade 6. Detonator well assembly and closing cap soldered together at .610" diameter hole, opening, closed with tape, pressure sensitive, 1 1/8" wide x 2" wide. Cone, base diameter 9.47" minimum diameter x 7.52" high x .158" thick, material, steel, strip, cold rolled, temper 4, alternate, steel, strip, hot rolled, PO. Container 9.485" diameter x 7.12" long x .024" thick seam welded, material, steel, strip, cold rolled, temper 3. Cover, Container, truncated cone shape, 3.03" diameter top and 9.57" diameter bottom x .024" thick to fit container neck for spot welding, material, steel, strip, cold rolled, temper 4. Neck, Container, 3.031" diameter x 2.75" long, x .042" thick tapered at both edges, material, steel tubing. Standoff Frame Assembly, consisting of 3 components, Band, 9 3/4" diameter x 1 1/2" wide x .120" thick, material, steel, strip, Leg, (3 ea) flared at bottom and right angle 1/2" bend at top, 15" long, material, steel, hot rolled, ( I X I X 1/8") angle, commercial. Legs arc-welded to band 120 degrees apart. Stand-off Frames Assembly (Alternate) consists of 3 components. Band, 9 3/4" diameter x 1 1/2"

wide .120" thick, spot welded side seam, material, steel, strip. Leg, (3 ea) flared at bottom and right angle bend at top, 15" long, material, steel, strip, hot rolled, legs spot welded to band 120 degrees apart. Hex-nut or weld-nut welded to side of band over drilled hole with thumb screw for either stand-off assembly. Complete charge, demo, metal parts assembly equipped with strap carrying assembly consisting of (2 ea) slides, (1 ea) end, web clip and webbing strap. Manufacturing firms should have a technical staff familiar with metal forming processes, welding and ordnance standards and specifications. This item is not considered complicated and difficult to manufacture, however, previous contractors have experienced problems in the production of this item.

10029. CHEST, PACKING, DEMOLITION, PLATOON, ENGINEER, PLYWOOD

With hardware, 33 1/16" long x 18 1/16" wide x 13 1/8" high, plywood Specification MIL-C-12044. Material ends, sides, top and bottom 5/8" plywood, partitions (9) 3/8" plywood. Dado all joints 3/16" deep for 5/8" plywood and 1/8" deep for 3/8" plywood, glue, nail and sand edges throughout. All hardware ordnance standards. Strip, fram bottom, ends and top, material, steel, hot-rolled, commercial strip, No. 20 USS GA, 1 1/4" x 1 1/4" x 155" approximate length and 1" x 1 1/4" x 102" approximate length, (2) wood blocks 12" x 2 1/4" x 1", draw bolts (2), commercial chain, 11 links approximately 12" (1), Burr-rivets (2), handle-bail (2), hinge-butt (1) hinge-strap (2), Hook-S (2), nut-tee (8), Rivet-eye (2), rivet-split (144), screw machine (8), screw-wood-FH (40). This item is not considered difficult to manufacture in accordance with ordnance standards and specifications.

10370. CLIP CORD, DETONATING, M1

1.94" long x .95" wide x .016" thick, deep notches each side with oval hole near center, development dimensions, .44" long through developed on one end, opposite end bent over approximate 165 degrees to form a finished length of 1.06", material, steel strip, temper No. 4, Specifications ASTM-A-109, alternate steel strip, temper No. 5, Specification ASTM-A-109, protective finish, Electrodeposited ainc, Type II, Class 2, with supplementary chromate treatment, Specification QQ-Z-325, color, green. An effective quality assurance system in compliance with Specification MIL-I-45208 shall be provided and maintained by the contractor. Manufacturing firms bidding on this item should be staffed with engineers and technicians familiar with metal stamping and forming of sheet metal. is item is not considered difficult to manufacture to applicable specifications.

10608. CLOSURE FOR ROCKET 66MM, ANTI-TANK, M72

Manufactured according to Specifications MIL-A-2550, MIL-STD-8, MIL-STD-9, MIL-STD-10, material high strength extruded aluminum

alloy, 2.94" overall length, 1.84" diameter at mouth extending .65", receding 60 degrees basic to 1.47" diameter cylinder extending 2.29", mouth beveled, modified buttress thread, 1.54 pitch diameter. Inside of cylinder has opening recessed diameter of 1.28" extending .76" with two (2) .065" wide grooves of diameter 1.33". Recessed section also has two (2) holes .10" diameter, countersunk, diametrically opposite each other. Grooves are connected by a third groove running across the holes. Good finishes are required on this item and it is hydrotested. Manufacturers bidding on this item should have a good technical staff featuring tool engineers acquainted with close-quarter operations. This item is considered to be difficult to manufacture according to applicable specifications and company should have 2 years immediate experience extruding 7001 aluminum.

10565. CONTAINER, AMMO, FIBER, M252A2 FOR 81MM MORTAR

Approximately 4" OD x 22" long, with 1 cushion, fillers, 1 spacer, 1 packing, 1 stop, 1 support and embossed metal ends. Manufacturing firms bidding this item should have the required technical knowledge for ammo containers, this item is not considered difficult to manufacture to applicable specifications.

03205. CONTAINER, AMMO, FIBER, M53A4

M53A4 for 90MM: Approximately 5-5/8" OD 38-5/16" long with 1 pad, 1 spacer, 1 packing stop, 1 support, metal neck ring and embossed metal ends. Manufacturing firms bidding this item should have the technical knowledge required in manufacturing processes for ammo containers. These items are not considered difficult to manufacture to applicable specifications.

03154. CONTAINER, AMMO, FIBER, M36A5

M36A5 for 81MM Mortar: Approximately 4" OD x 14 1/2" long, with 1 cushion, 3 fillers, steel neck ring, steel support ring and embossed metal ends. Manufacturing firms bidding this item should have the technical knowledge required in manufacturing processes for ammo containers. These items are not considered difficult to manufacture to applicable specifications.

10573. CONTAINER, AMMO, FIBER, M37A5

M37A5 for 81MM: Approximately 4" OD 23 3/16" long with 1 cushion, 3 fillers, 1 metal neck ring, 1 metal support ring and embossed metal ends. Manufacturing firms bidding this item should have the technical knowledge required in manufacturing processes for ammo containers. These items are not considered difficult to manufacture to applicable specifications.

11034. CONTAINER, AMMO, FIBER, M118A2 FOR FUZE, PD, M525A1, M527

Approx. 2-27/32" diameter x 8-7/16" long, material Duplex Kraft Paper impregnated with asphalt and spirally wound, manufactured and tested in accordance with Spec. MIL-C-2439, except cover and outer tube shall have .001" aluminum foil liner in accordance with Spec. MIL-A-148 adhered between layers of Duplex Kraft Paper with asphalt with lap of foil not less than 1/4", with filler, approx. 1-13/16" x 1-13/16" x 1/16", material chipboard, commercial, neck ring, material steel in accordance with Spec, MIL-C-2439, support ring, 21 gage steel, Spec. QQ-S-698, Grade 1009, spacer, approx. 2-5/16" diameter x 3/8" long with central hole approx. 53/64" diameter counterbored to 1-1/16" diameter each end, material asphalt-asbestos compound Spec MIL-C-13212 and ends, 28 gage, material steel embossed with nomenclature: Manufacturing firms bidding this item should have the technical knowledge required in manufacturing processed for ammunition fiber containers. This item is considered difficult to manufacturing to applicable specifications due to adhesion problems inherent in the process of laminating the aluminum foil to the paper.

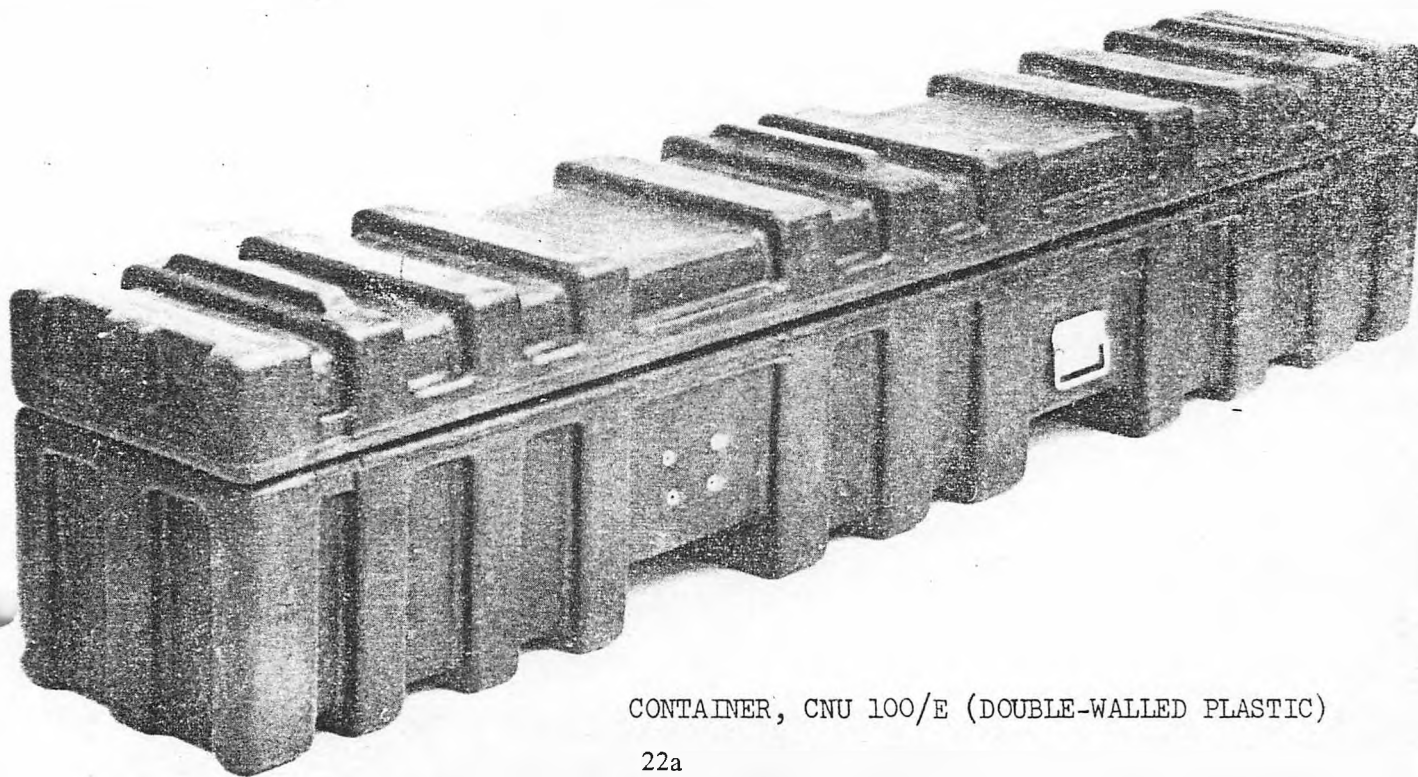
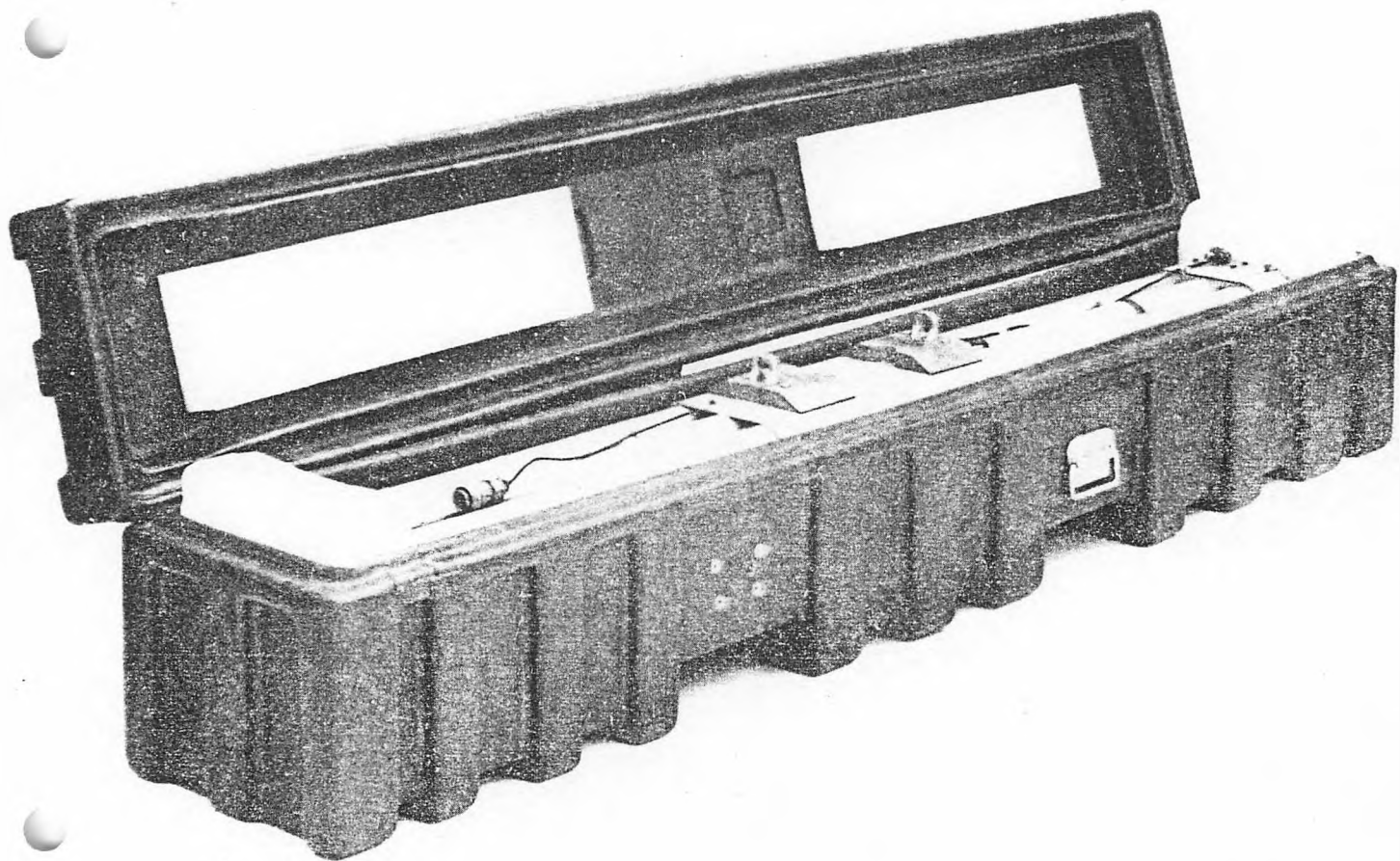
CONTAINER, AMMO, FIBER, f/105MM

- 11142. M34A1
- 11143. M105A2
- 11144. M422
- 11145. M435
- 11146. M451

The above containers are all constructed basically the same and are spiral wound. They are made in several sections of duplex kraft paper and in two tubes approx. 3/8" thick in accordance with Spec. MIL-C-2439. Outer (cover) tubes are impregnated with asphalt and has a .001 thick aluminum foil MIL-A-148 adhered between two layers of paper. Contains metal ends No. 28 gage steel with spacers and pads. Wooden separator and metal packing stop or alternate molded support assembly sometimes procured separately and provided to container producer for insertion into assembly.

11089. CONTAINER, SHIPPING AND STORAGE, CNU-100/E

Consists of two components; Body, approximately 85.5" L x 14" W x 12.75" H with a "V" shaped trough running lengthwise of body and various reinforcing ribs, .060 minimum wall thickness, material, high density polyethylene in accordance with 22748 Class A, Grade 4, approved source Dupont, E. I, DeNemours & Company; Cover, approximately 85.5" L x 14" W x 4" H with 1.6875" deep 30 degree side, flat bottom trough running lengthwise of body and various reinforcing ribs, .060 minimum wall thickness, material, same as body.



CONTAINER, CNU 100/E (DOUBLE-WALLED PLASTIC)







CONTAINERS, AMMUNITION, PLASTIC

- 11265. CONTAINER, AMMUNITION, PLASTIC f/81MM, M513
- 11266. CONTAINER, AMMUNITION, PLASTIC f/90MM, M557
- 11267. CONTAINER, AMMUNITION, PLASTIC f/105MM, M578
- 11301. CONTAINER, AMMUNITION, PLASTIC
- 11289. CONTAINER, AMMUNITION, PLASTIC f/TFDM, Z5361
- 11290. CONTAINER, AMMUNITION, PLASTIC, RUB MAID, R388

All types in Spec MIL-C-60378, made by injection molding, of pigmented, high density, polyethylene or copolymers thereof. The resin contains .3% carbon black, an anti-oxident and an ultra-violet stabilizer. Salvaged, reworked, or scrap material cannot be used. Containers are two or more separately molded tubular parts. Sizes range from 4" to 5 3/8" D, and 3" to 22" Lengths, and .15" to .22" wall thicknesses. One or both ends of parts are open and molded threaded. Container joints and closures are fitted with talc lubricated, neoprene O-Rings. Some parts require molded in place aluminum discs; turned or drilled wood inside supports; and .06" wall thickness tubes or caps of either extruded, blow molded, or injection molded high density polyethylene. Supports, tubes, and caps are loose, epoxyed, or glued in place. Exterior surfaces are treated to promote printability. Marking and color per individual drawing and Federal Standard 595. Pack to protect surfaces for subsequent marking. The containers are easily manufactured.

10307. CONTAINER, SHIPPING & STORAGE, CNU-79/E

Container, Shipping and Storage, CNU-79/E is approx 8' 7" L x 31.4" W x 31 1/4" H, weight approx 785 pounds, consisting of cover assembly, base assembly, suspension frame assembly and 4 skids. Base Assembly, approx 8 1/2' L x 31.4" W, 12 1/2" H, end U-shape consisting of Base Shell approx 8' L x 26.5" W, 8.8" D, semi-circular shaped, thickness .078", material, steel, carbon, sheet, Specification ASTM-A-245 or A-415, alternate material, steel sheet HRCQ, Specification QQ-S-698, two Lower End Flanges, each approximately 31" L x 2.37" H x 1.5" W, .187" thick, L-shape, material, steel, sheet, Specification ASTM A-7 or A-373, two Lower Side Flanges approximately 8 1/2' L x 1.5" W x 2.375" H, thickness .187, L-shape, material same as for lower End Flanges, Roll Over Supports (12) approx 7.75" L x 2" W, .187" thick, material steel, carbon, sheet or strip, Specification ASTM A-245, A-415 or A-425, 2 Base Caps approx 26.5" L x 8.8" D, .075" thick, material, steel, carbon, sheet, HBCQ, Specification QQ-S-698, two Supports, approximately 26 3/4" L x 11" W, 3.62" H, .187" thick, material, steel, carbon, sheet, HRCQ, Specification ASTM-A-245 or A-415 Desiccant Cage, Approx 10" L x 4" W x 6" D, material, steel, wire, grade 1010 to 1020 per ASTM A-510, four (4) Retainer Skids, two (2) approximately 36.8" L

and two (2) approximately 24.8" L x 3.86" W x 1.5" H, L-Shape, thickness .187", material, steel, carbon, sheet, per Specification ASTM-A245 or 415, Cover Assembly, approximately 8' 5" L x 30.2" W, 18.2" H, consisting of two (2) Cover Caps, approximately 26.6" L x 14.6" H, thickness .075", material, steel, carbon, sheet, Specification ASTM-A245 or 415, two (2) Upper End Flanges, approx 26.69" L x 1.75" H, .188" thick, material, steel structural angle, Specification ASTM-A-7 or 373, two (2) Upper Side Flanges, approx 8' 5" L x 1.75" W, .188" thick, material, same as for upper side Flanges, Cover Shell, approx 8' 1/2" L x 26.6" W, 14.6" D, semi-circular shape, thickness .078", material, steel, carbon, sheet, Specification ASTM-A-245 or 415, Suspension Frame Assembly, approximately 6' 2" L x 20" W x 5.85" D, consisting of two (2) Side Rails approximately 6' 20" L x 3" W, 5.88" H, L-Shape, thickness .250, material, steel, carbon, plate, Specification ASTM-A-7, two (2) Supports, approx 16" L x 2" W, one 2" D, other 1.07" D, material, steel structural tee, Specification ASTM-A-7 or A 373, or bar size tee, merchant quality M1010 to M1020 per ASTM-A-107, 1 Aft Support, approx 16.3" L x 2" W, x 2" D, material, steel, structural angle, Specification ASTM-A-7 or A-373, Brace, approx 5.6" L x 2" W and 2" H, material, same as for two (2) supports, nine (9) Cushions, material, rubber, extruded, Class 2, GR60, Specification MIL-R-6855. Additional similar components, 4 resilient mounts, hardware, and wood skids not listed are required. Fabrication is generally by welding. Rigid tests are required such as drags, and impact. This item is considered difficult to produce in accordance with applicable specifications.

09901. CONTAINER, SHIPPING & STORAGE WARHEAD SECTION, XM477

Assembly is approx 98" L x 27" width x 32" H and consists of two sections, bottom section 19" H, top section 13" H with built in saddles to fit Warhead, component parts and sub-assemblies are depicted on (160) drawings, major components, Saddle forward, 15 3/8" W x 7.53" H x 3.03" L with half circle 6" radius with web supports, material Aluminum alloy sand casting composition 3, Temper T6, Spec QQ-A-601, Clamp, Forward Saddle semi-circle shape, 3.03" L x 14.78" D with taper bore, material, aluminum alloy sand casting Composition 3 T6, Spec, QQ-A-601, Shell Top, semi-circle shape 93.31" L 13.06" radius, wall thickness .075", material, carbon steel sheet. Shell bottom, similar to shell top. Other major assemblies are fabricated by welding, riveting, blanking, forming from aluminum alloy sheets, 6061-T6, and steel sheets and strips. The complete assembly must withstand a number of rigid tests such as static load, function, air pressure and pressure retention, shock, cornerwise drop, edge-wise drop, impact, rollover, vibration and fit tests. This item is considered extremely difficult to produce in accordance with ordnance specifications.

10562. CRATE, BOX, WIREBOUND, AMMO FOR M2A1 and M19A1

Box, Style 2, Class 3, type 2 load, "D" end arrangement. M2A1 OD 14-7/8" L x 12-11/32" W x 8-1/8" H with 2 filler ends and 1 separator. Manufactured per Dwgs. #F-7553347. M19A1 OD 17-1/8" L x 11-15/32" W x 7-1/4" H with 2 filler ends and 3 separators. Manufactured per Dwg #F-5581378. Both manufactured per specification PPP-B-585.

10345. CRIMPER, CAP, M2 w/FUZE CUTTER

Similar to a special pliers, with First Section 7" L with curved two (2) jaw openings are tapered to a sharp edge on a 41 degree angle and a chisel point on handle end, 1/4" W. Second section 6 and 15/16" L with a pointed tip on handle end, curved two /2/ jaw openings are tapered to a sharp edge on a 41 degree angle. A 27/64" hole drilled thru both sections, to receive one /1/ Screw, type, American standard, pan head, machine screw/ASA-B18.6 - 1947, No. 12-32-2A x .57" L. Nut plain, hexagon, No. 12-32 NEF, Type II, Style O. Material for handle sections steel, SAE, No. 1045 to 1050, Protective finish, zinc, electrodeposit, Spec QQ-Z-325, Type II with supplementary phosphate treatment. Point and blade to be hardened to read RD 40 to 45, other parts to be hardened to RC 50 to 55. Crimping opening diameter when closed is .172-.002". To have protective olive drab finish. This crimper is not considered difficult to produce by firms in this type of manufacturing.

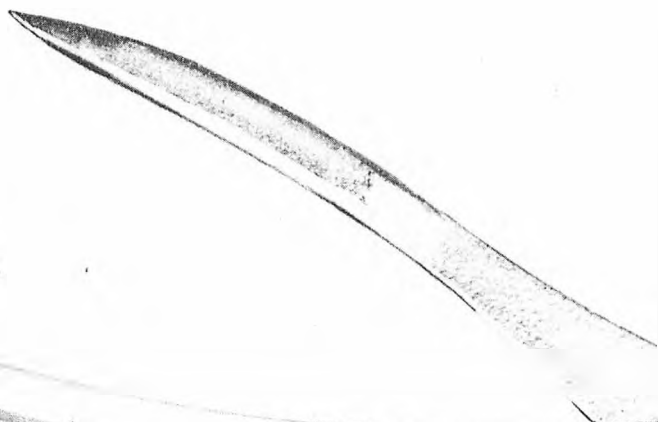
10356. CUP, CLOSING FOR 105MM, BLANK, M395

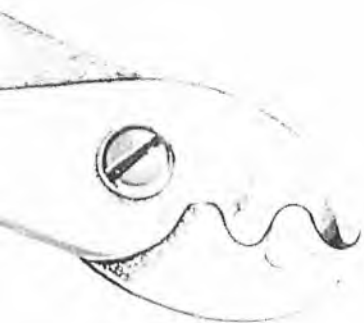
Consists of a one-piece component, 4.157 - .005" O.D. x 4.022" plus .010" I.D., .38- .01" H x .07 - .01" thick at bottom, material, plastic, polystyrene, transparent, molding, Type I, Spec. L-M-520. Manufacturing firms bidding this item will require a technical staff with knowledge of plastic materials and molding processes. This item is not difficult to manufacture.

10591. CYLINDER ASSEMBLY f/CBU-28

Consists of two(2) components. Cylinder, approx 11.935" L x 4.76" OD x .0575" wall thickness with one open end. Closed end approx .375" thick with approx 2.22" L x 2.0" D hub. Hub drilled various sizes from .3125 to 1.775" D. Material, aluminum alloy extruded composition 6061-T6, Spec MIL-A-12545. Protective finish number 7.21 of MIL-STD-171. Bushing, .442" D x .35" L with one .442" D x .060" thick flanged and .076" hole drilled through center. The cylinder is considered difficult to produce to ordnance standards and specifications.







ORD K2294





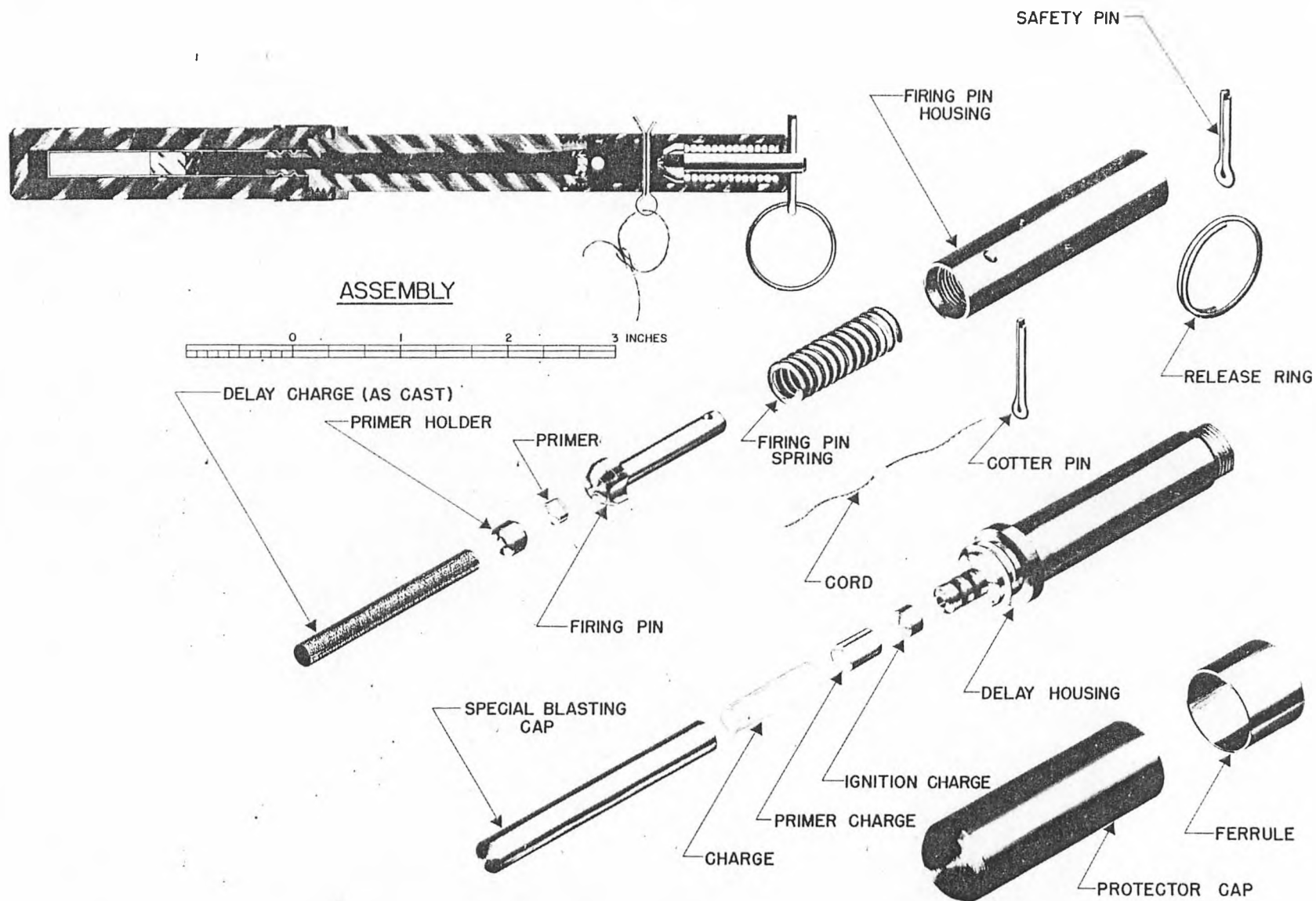
11182. DELAY PLUNGER, M1, MPTS

Consists of 14 components as follows: Body Plunger: length .102" x .974" W. There are various size drilled holes and machined cavities. Material is brass, rod, free cutting, halfhard, ASTM-B16. Housing Plunger: A drawn cup 1.050" L x 1.054" OD with .027 wall thickness. There are 4 punched holes in the bottom and 2 holes in the side. Material is steel, strip carbon, hot-rolled, commercial quality ASTM A-425 or ASTM A-415. Support Plunger, .615" L x .250" D with flanged head .418" D. Material, steel, bar carbon cold finish 1137 or 1035 ASTM A108. Washer Lock Check stamped from flat stock. It is .560" D with two small holes. Material, brass strip, alloy 1 ASTM B-36. Other minor parts such as small springs and pins are not difficult to manufacture.

09856. DETONATOR, DELAY, 15 SEC. M1E1

This item is 7.39 inches long, consists of approximately twelve components, the major components consist of: Housing, firing pin 2.10 inches long by .505 inch outside diameter, inside diameter .371 inches, .19 inch hole at one end .371 inch hole at other end plus .45 inch slot milled to a depth of .08 inches, 3 holes drilled 120° apart .35 inches from one end, holes .12 inch diameter. One end with internal threads. Material: zinc base alloy diecasting, alloy AG40A or AC41A, ASTM B-86. Alternate material: Aluminum - alloy drawn seamless tube, alloy 3003-H-14 ASTM B210 or aluminum - alloy, rod, specification QQ-A-225/3 or alloy 2011-T3, ASTM B2111. Spring, firing pin diameter of wire .063 inches, number of coils 13 active coils 10, free height 1.13 inches season by heating to 525° F + 25° F for 30 minutes after forming. Material: wire, steel, spring, music, ASTM-A-228. Pin, firing 1.37 inches long .18 inch outside diameter, cylindrical body, .1040 inch hole drilled through body at one end, other end has a .25 inch taper with a .070 inch diameter point. Material: hot-rolled carbon steel bar, 1010 to 1020 annealed, ASTM A107 or QQ-S-631, hardness of firing pin after plating not to exceed rockwell B60. Ring pull 1 1/2 coils, close wound, inside diameter .74 inches, wire diameter .054 inches. Material: Wire, steel, high carbon, Class A, specification QQ-W-428, or ASTM A227. After forming season by heating to 525° F + 25° F for 30 minutes, to relieve stress. Other minor components in Firing Pin Assembly consist of a Safety Cotter Pin with cord and a Pin, Cotter for firing pin. Housing delay 2.98 inches long by .505 inch outside diameter, .194 inch diameter hole formed in center for a length of 2.465 inches .101 inch diameter hole formed at other end for a length of 1.51 inches. Outside threads at both ends two crimp grooves formed at one end and a .13 inch knurl on the body. Material: zinc - base alloy die casting alloy, AC41A, AC40A, ASTM B-86. Holder primer .15 inches high by .25 inch outside diameter, one end with .173 inch diameter by .115 inch depth, other end .10 inch diameter hole. Material: zinc - base alloy, die casting, alloy, AG40A or AC41A, ASTM-B-86. Protector Cap 2.98 inches





# DETONATOR, DELAY, 15 SECOND, MIEI

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long, .695 inches outside diameter, cylindrical tube with .31 inch inside diameter closed at one end, open end recessed to a depth of .26 inches and threaded. Material: plastic, ethyl - cellulose, type II, Class I specification MIL-P-22985 color familiar to olive drab. Firms bidding this item will require a staff of engineers, chemists, and tool designers to produce in mass quantity and also to meet government specifications.

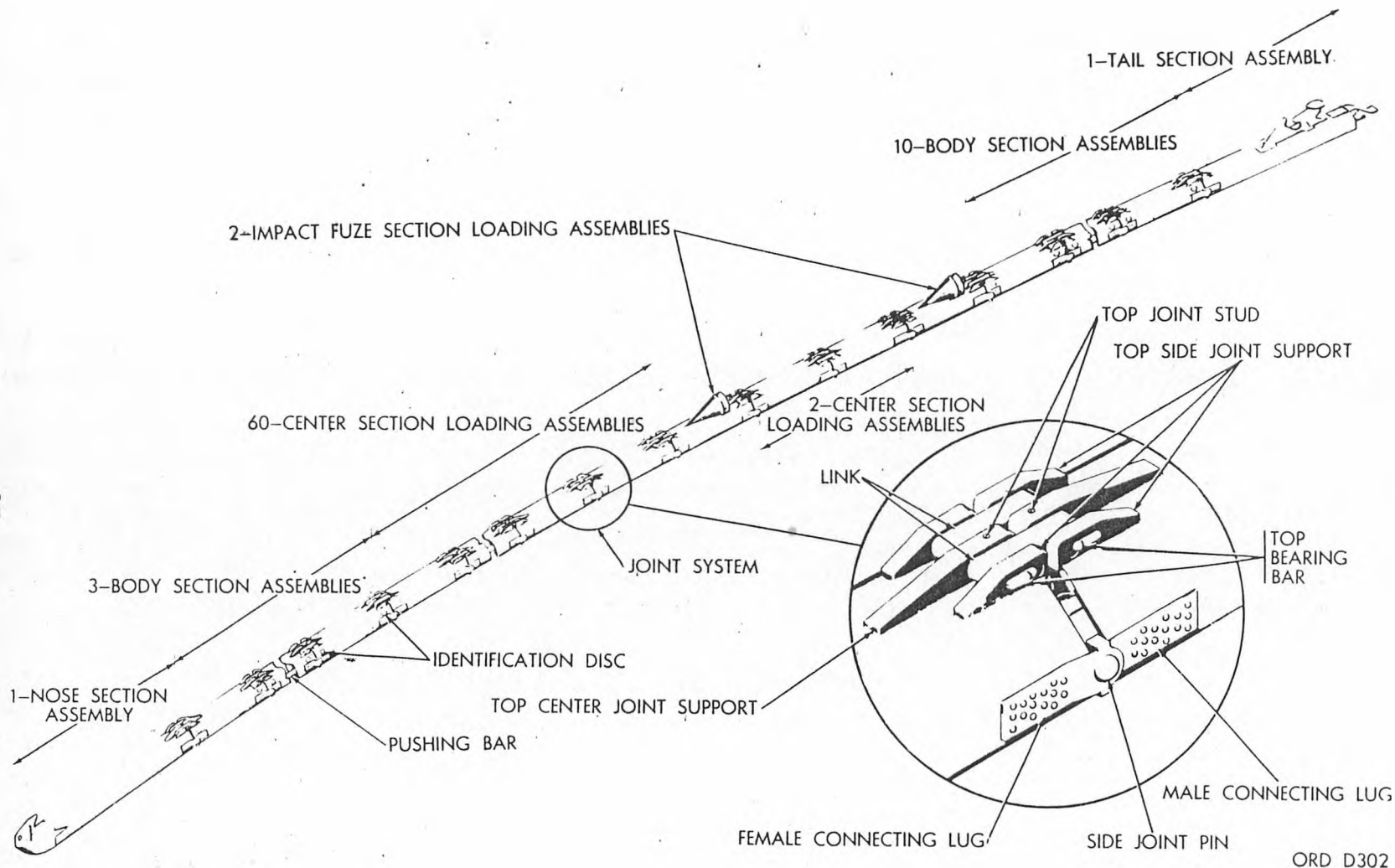
10312. DEMOLITION BLOCK HOOK ASSEMBLY

Consists of two components, Hook, of Class A Plastic Laminated Thermosetting Sheet Material 1/8" x 1" x 1-3/4" cut to shape with acute angles and a hole for cord tie. Cord, Tying, nylon cordage 72 inches long, from an approved source.

09850. DEMOLITION KIT, PROJECTED CHARGE, M157, PARTS

Consists of (81) assemblies, (62 each) center section, (13 each) body section, (2 each) impact fuze section, (2 each) explosive fuze container section, (1 each) nose section, (1 each) tail section. Nose section Assembly, approximately 90" x 12" x 7 1/2" high with (24) components, (5) sub-assemblies and (10) specifications. Impact Fuze Section Assembly, approximately 90" x 12" x 14 1/2" high with (39) components (9) sub-assemblies and (30) specifications. Body Section Assembly, approximately 90" x 12" x 7 1/2" high with (22) components, (6) sub-assemblies and (18) specifications. Center Section Assembly, approximately 60" x 12" x 7 1/2" high with (24) components, (6) sub-assemblies and (11) specifications. Tail Section Assembly, approximately 90" x 12" x 7 1/2" high with (36) components, (5) sub-assemblies and (12) Specifications. Explosive Fuze Container Assembly, (8) components, body, U-shaped, 6.24" long x 3.2" wide x 6.2" high, top radius is 1/2 of width 3.12" x .063" wall thickness, base, 6.24" long bent 90 degrees to 3.13" wide x 1.6" high by .063" thick, plate, back, 6.24" long x 6.15" high, top radius is 1/2 length 3.12" with 2.99" center hole, .063" thick, plate, front, 6.24" long x 6.32" high x 1.25" thick with top radius of 1/2 length 3.12" with 1.11" center fuze cup hole, above (3) items are steel sheet as rolled. Bushing, 1.29" inside diameter x .29" wide with 1-7/16" 18NEF-2A external thread .21" wide, material, steel bar, C1117 or C1118 cold rolled. Cup, 1.062" inside diameter, 1.37" long with flange edge, .31" long x 1.28" diameter, material, steel strip, T4, finish number 1. Cap, cup shape, 1.58" outside diameter x 1-7/16" 18NEF-2B inside thread x .44" wide, medium knurl on .44" width, material, steel bar, C1117 or C1118, cold rolled. Plug, cup shape, flange edge, 3.26" diameter cup diameter 3.002" outside diameter x .0673" thick material, steel strip, cold rolled, No. 3 dull finish. Materials, first (5) sections, aluminum alloy-bar, rod, plate, sheet, sand castings and aluminum alloy extruded for body components. Steel alloy-tubing, bar steel carbon bar, steel music and high carbon





28-017-1371/AMC-63

Picatinny Arsenal

Demolition Kit, Projected Line Charge, M157





springs, rubber gaskets, steel cast armor, homogeneous for flat plate, 6.88" long x 6.85" high x .375" thick and impact plate, 6.2" diameter x .64" thick with hub 1.52" diameter x .75" long. The five major assemblies require aluminum inert, gas shield, arc welding. Each section will be packaged and packed in separate wood boxes per detailed ordnance drawings and specifications. Many similar parts, sub-assemblies and standard parts are part of the major sections. Manufacturing firms bidding this item should be technically staffed with engineers, technicians, and tool designers familiar with ordnance standards and specifications. Production methods will require considerable knowledge of metal working and fabricating processes. This item is considered difficult to manufacture in accordance with applicable ordnance requirements.

04637. DISPENSER, BOMB, SUU-7C/A ASSEMBLY WITH SHIPPING AND STORAGE CONTAINER XM468

Dispenser approx 10' L x 15.5" D, weight approx 150 pounds, and consists of approx /145/ different components, major components, Bulkhead Forward, 15.5" D x 3.25" L, /19/ holes through length with various diameters, various size smaller holes on OD, material, Aluminum casting Class 8, T6 Spec QQ-A-596 of Alloy 356, T6 Spec QQ-A-601. Cone Aft, 15.5" D x 10.29" small D x 9.5" L 1.54" radius notches in small D with various size holes and slots, .050" thick, material, Aluminum sheet 6061-T6 or Aluminum 5154-H32 Spec MIL-A-17357. Gasket, Forward Bulkhead, 15.05" D x .125" thick various size holes, material, rubber synthetic sheet Spec MIL-R-900, Alternate, Rubber, Sheet, Type I, Class I, Spec MIL-R-1149. Strongback, 58" L, "moon shape" varying thickness from .174" to 1.5" x 9.4" W x 7.92" radius various size holes drilled, C. Bored and threaded, material, Aluminum alloy, extruded 6061-T6, Spc QQ-A-200/B. Flange, Aft Cone, 15.5" D x .80" H x 10" wall thickness x 11.88" hole in base with various radiuses and holes, material, Aluminum sheet 2024-T3 or T4, Specification QQ-A-250/4. Bulkhead Aft Intermediate, 15.5" D x .80" H "cup shape" with /19/ holes 2.864" D in bottom, material, same as Flange Aft Cone. Bulkhead Aft, similar to Bulkhead Intermediate. Receptacle Detent, 2.57" L x .48" H "V shape" x .76" W, various size holes and C. Bores, material, Aluminum die casting Composition 13, A380 or 360, Spec QQ-A-591. Tube, /19/ each 2.83" D x various lengths from 99.34" to 110.2" x .02" wall thickness ID to be sized after assembly, material, Aluminum tube, 5052-0, Type I, Spec WW-T-700/4. Skin, Body, 15.6" D x 73.78" L .050" wall thickness, formed to semi-circle 293 degrees, material, Aluminum sheet 2024-T3, Spec QQ-A-250/4. Cone, Nose, parabola shape, 15.47" OD large end x 4.49" small end x 17.12" L with wall thickness varying from .1050" to .085", material, Aluminum 6061-T6, Spec QQ-A-250/11 or Aluminum 5154-H38, Spec ASTM-B209. Lug, Suspension, "eyebolt shape" 2.45" L x 1.75" D, 12-UN thread on OD one end, material, steel 4340, Spec MIL-S-16974, heat treat to 44 Maximum Rockwell C

Cadmium or Zinc plate. Spring Ejection, 10.38" free L 2.47" OD wire D .146", material, steel wire, Spec QQ-W-470 heat treat and plate. Piston Ejection, 2.775" OD x 3.15" L, designed with .15" thick web near center varying wall thickness from .020" to .20" approx, material, Aluminum die casting, Class 8 T6, Spec QQ-A-596 or Aluminum die casting Alloy 360 or 380, Spec QQ-A-591. Channel Aft, 15.25" L x 2.03" W "channel shape" x .050" thick formed with /11/ .16" D holes, material, Aluminum 2024-T3 or T4, Spec QQ-A-250/4. Plug, Retaining, 4.71" D x 4.80" L x 2.28" ID Bore x 1.56" D hole in base end, material, Aluminum alloy die casting Composition 8 T6, Spec QQ-A-596 or Aluminum alloy die casting Composition 360 or 380, Spec QQ-A-591, protective finish to withstand 96 hour salt spray test. Harness Assembly, 30" minus 1" L, material wire electrical, Size 20, Type E, Spec MIL-W-16878/4, solder, sleeving installation electrical. Stepper Switch Assembly, 4.541" L x 1.375" W. Considerable number of small components, rotary, solenoid, dust cover, wafer, coil, clips, etc. Radhaz Filter Assembly, wire electrical, Size 20, Type B, Specification MIL-W-16878/1, solder Pot sealing compound, sleeving insulation electrical. A considerable number of small components not indicated such as rivets, bolts, weld studs, screws, washers, and complex electrical devices, etc. A considerable amount of gages, special test and manufacturing equipment will be required. This item is considered very difficult to produce. Dispenser protector and bomb retainer, frustum of cone, 28.50" L x 15.73" large D x 4.50" small D x .100 wall thickness with eighteen elliptical holes in sides, material, steel, sheet, CRCQ or HRCQ Spec QQ-A-698. Shell, Protector, Bomb, Dispenser, 29" L x 16.5" D x .05" wall thickness with one closed end, material: Steel, HRCQ or CRCQ, Spec QAC-PD-32. Container, Shipping and Storage XM468 is procured with Dispenser SUU-7A/A is approx 11' 4" L x 51" W x 20" H, weight 560 pounds, fabricated in two sections /Top and Bottom/ and consists of approx /45/ different components, major components, Body, Lower, 126.9" L x 27.88" W "U shape" to 10.9" radius with 3" W channels formed on each side, material, carbon steel sheet .060" thick, commercial quality, Spec ASTM-A366. Body, Upper, 131.77" L x 28.98" W, "U shape" to 10.9" radius with 3.47" end 1.425" angles formed on each side, material, same as for Body, Lower. Stiffener, Right Hand, 131.6" L, right angle shape, 3.31" x 1.24" x .132" thick, with various holes and slots, material, carbon steel sheet, commercial quality, ASTM-A366 or 415. Stiffener, Left Hand, same as right hand. Pad, Cushioning Assembly, 84" L x 33" W x 3.41" H 10 or 12 degree notches one side for allowance to form semi-circle to fit in Body, Upper and Lower, material, expanded polystyrene, Spec PPP-A-00850, Class 3. Gusset, Lifting, 29.84" L x 13.44" W x .075" thick with 11" radius one side and various size holes and slots, material, steel carbon sheet, commercial quality, Spec ASTM-A366 or 415. Plate, Upper Front, 29.84" L x 14" wide x .132" thick with various size holes, notches and slots, material, same as Gusset, Lifting. Plate, Upper, Rear, same as Plate, Upper Front. Pad Cushioning Front, 22" D x 4.06"

thick, material, expanded polystyrene, Spec PPP-C-00850, Class 3. Beam Box, 26.03" L x 10.28" W x 3.35" H x .132" wall thickness fabricated by forming and welding, material, steel carbon sheet, ASTM-A366 to 415. Disc Plywood Front and Rear, 21" D x .25" x 1" thick, material, plywood container grade, Type 1, Class 1, Spec NN-A-515. Skid, 38-3/4" L x 3-5/8" x 2-5/8", material, wood, Spec MIL-C-104. Additional similar components not listed are required. Assembly is fabricated by welding. Rigid tests are required such as edgewise drop, cornerwise drop, end impact, roll over vibration, forklifting, stacking and hoisting. This item is considered difficult to produce in accordance with applicable specifications.

10132. DISPENSER, BOMB, SUU-10/A ASSEMBLY w/SHIPPING & STORAGE CONTAINER, XM468

The Dispenser, approx 10' L x 15.5" D, weight approx 160 pounds and consists of approx /130/ different components. Major components, Bulkhead, Forward, 15.5" D x 3.25" L /19/ holes through length, D ranges from 1.80" to 2.50" with various size smaller holes drilled, threaded, on OD and through length, material, Aluminum alloy casting Class 8, alloy 356-T6, Spec QQ-A-596 or Aluminum alloy sand casting alloy 356-T6, Spec QQ-A-601. Cone Aft, 15.5" D x 10.29" small D x 9.5" L, 1.54" Rad, notches in small D with various size holes and slots, material, Aluminum sheet 6061-T6 .050" thick or Aluminum 5154-H32. Tube, Cover and Retainer, 9.115" L x 2.79" D x 1.40" Rad opposite end with rib section between, material, Aluminum sand casting, Spec QQ-A-601 or Aluminum permanent mold casting, Composition B, Spec QQ-A-596. Gasket, Forward, Bulkhead, 14.96" D x .125" thick, various size holes, material, rubber, synthetic sheet, Spec MIL-S-900. Plug, End, 2.76" D x 4.5" L with C. Bores and holes in end, material, polyurethane foam, rigid density 15 to 18 pound cubic feet, Spec MIL-P-26514. Strongback, 36" L "moon shape" varying thickness from .174" to 1.5" x 9.4" W x 7.92" Rad various size holes, drilled, C. Bored and threaded, material, Aluminum alloy, extruded, 6061-T6, Spec QQ-A-270. Flange, Aft Cone, 15.5" D x .80" H x .10" wall thickness x 11.88" hole in base with various radiuses and holes, material, Aluminum sheet 2024-T3 or T4, Spec QQ-A-355. Bulkhead Intermediate, 15.5" D in bottom, material, same as Flange Aft Cone. Bulkhead Aft, similar to Bulkhead Intermediate. Bulkhead, Center, similar to Bulkhead Intermediate. Channel Forward, 22.125" L x 2.03" W Rad formed with various size holes, material, Aluminum sheet .050" thick 2024-T3 or T4. Receptacle Detent, 2.57" L x .48" H "V-shape" x .76" W with various size holes and C. Bores, material, Aluminum die casting, Composition 13, A380 or 360, Spec QQ-A-591. Shell, Aft Cover, 15.88" D x 29" H x .050" wall thickness with various size holes and slots, material, steel sheet OAC. PD-32. Tube, /19 each/, 2.83" D x various lengths from 99.34" to 110.2" x .035" wall thickness ID to be sized, material, Aluminum tube 5052-0. Skin, Body, 15.6" D x 73.78"

L x .050" wall thickness, formed to semi-circle, 293 degrees, material, Aluminum sheet 2024-T3, Specification QQ-A-355. Cone, Nose, "parabola shape", 15.06" OD large end x 6.5" small end x 16.5" L with wall thickness varying from .050" to .095", material, Aluminum 6061-T6, Spec QQ-A-327 or Aluminum 5154-H38, Spec MIL-A-17357. Lug, Suspension, "eyebolt shape", 2.45" L x 1.75" D, 12 thread on OD one end, material, steel 4340, Spec MIL-S-16974, heat treat to 44 maximum Rockwell Cadmium or Zinc plate. Spring Ejection, 14.5" free length 2.75" to 2.28" OD wire D .162", material, steel wire, Spec QQ-W-470, heat treat and plate. Cup, Seal, 2.944 to 2.67" OD x 1.45" L x .016" to .200" wall thickness, material, polyethylene, Type 1, Grade 2, Eastman tenite 800. Piston, "cup shape", 2.785" OD x 3.12" L x 2.5" ID x .29" base thickness, material, Aluminum die casting alloy 360 or 380, Specification QQ-A-591. Channel Aft, 15.25" L x 2.03" W "channel shape" x .050" thick formed with /11/.16" D holes, material, Aluminum 2024-T3 or T4. Bulkhead Auxiliary, 10.29" D x .063" thick with /7/2.864" holes and /12/1.44" Rad on OD material, Aluminum sheet, 2024-T3, or T4 Spec QQ-A-355. Panel, Forward, 13.9" L x 8.13" W x .050" thick formed to 7.75", material, Aluminum sheet 2024-T3 or T4. Harness Assembly, 18 minus 1" L, material wire electrical, Size 20, Type E, Spec MIL-W-16878/4, solder. Radhaz Filter Assembly, wire electrical, Size 20, Type B, Spec MIL-W-16878/1, solder, pot sealing compound, sleeving installation electrical. A considerable number of small components not indicated such as rivets, bolts, weld studs, screws, washers and complex electrical devices, etc. are not listed. A considerable amount of gages, special test and manufacturing equipment will be required. This item is considered difficult to produce. Switch Component Assembly, consisting of mounting panel, terminal lug, bracket, switch push-button, little fuze air force type, 4AG, 5 amp, rating 32 volts maximum, sleeving, insulation, electrical, non-rigid, Type F, Form U, Grade B, Class 1, Spec MIL-I-631, wire, electrical, Size 20, Type E, Spec MIL-W-16878/4. Container, Shipping and Storage, XM468, is procured with Dispenser SUU-10/A is approx 11' 4" L x 51" W x 29" H, weight 560 pounds, fabricated in two sections /Top and Bottom/ and consists of approx /45/ different components. Major components, Body, Lower, 126.9" L x 27.88" W, "U shape" to 10.9" with 3" W channels formed on each side, material, carbon steel sheet .060" thick, commercial quality, Spec ASTM-A366. Body, Upper, 131.77" L x 28.98" W, "U shape" to 10.9" Rad with 3.47" x 1.425" angles formed on each side, material, same as for Body, Lower. Stiffener, Right Hand, 131.6" L, right angle shape, 3.31" x 1.24" x .132" thick with various holes and slots material, carbon steel sheet, commercial quality ASTM-A366 or 415. Stiffener, Left Hand, same as Right Hand. Pad, Cushioning Assembly, 84" L x 33" W x 3.41" H, 10 to 12 degree notches on one side for allowance to form semi-circle to fit Body, Upper and Lower, material, expanded polystyrene, Spec PPP-C-00850, Class 3. Gusset, Lifting, 29.84" L x 13.44" W x .075" thick with 11" Rad one side and various size holes and slots, material, steel

carbon sheet, commercial quality, Spec ASTM-A366 or 415. Plate, Upper Front, 29.84" L x 14" W x .132" thick with various size holes, notches and slots, material, same as Gusset, Lifting. Plate, Upper, Rear, same as plate, Upper Front. Pad, Cushioning, Front, 22", D x 4.06" thick, material, expanded polystyrene, Spec PPP-C-00850, Class 3. Beam Box, 26.03" L x 10.28" W x 3.35" W x .132" wall thickness fabricated by forming and welding, material, steel carbon sheet ASTM-A366 or 415. Disc, Plywood, Front and Rear, 21" D x .25" and 1" thick, material, plywood container, Grade, Type 1, Class 1, Spec NN-P-515. Skid, 38-1/4" L x 3-5/8" x 22-5/8", material, wood, Spec MIL-C-104. Additional similar components not listed are required. Assembly is fabricated by welding. Rigid tests are required, such as edgewise drop, cornerwise, drop, end impact, roll over, vibration, forklifting, stacking and hoisting. This item is considered difficult to produce in accordance with applicable specifications.

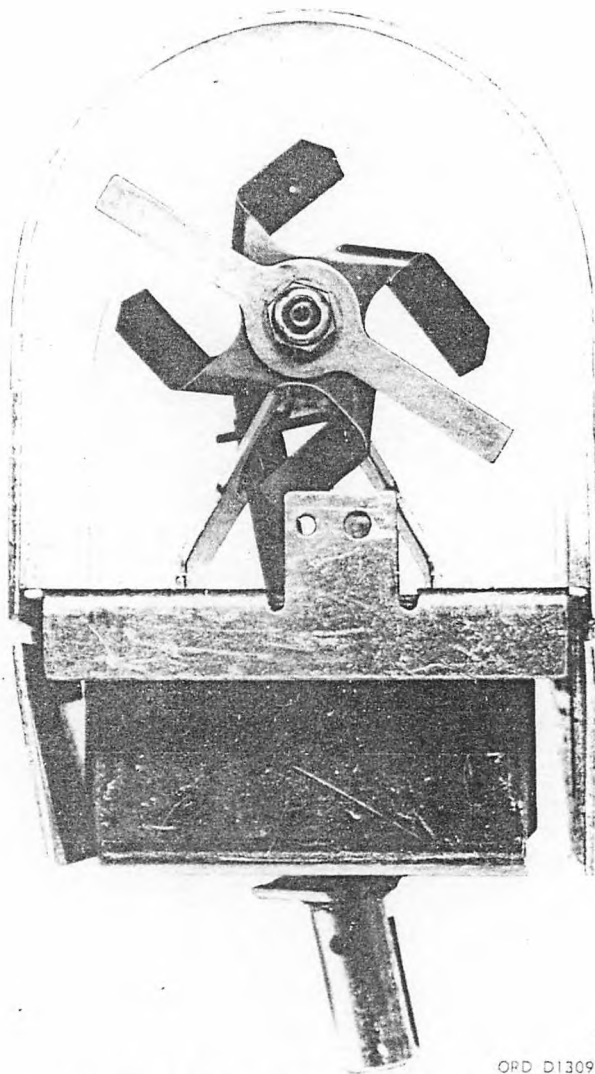
10526. DISPENSER, BOMB, SUU-14A/A

Dispenser is approx 80" L and approx 8" in D and consists of approx 30 component parts. Major component Tube, approx 74" L, 3" diameter, .06 wall thickness, material, aluminum alloy, extrusion 6061-T6 or 6062-T6, Spec QQ-A-270, alternate material, aluminum alloy 6061-T6 or 6062-T6, type 1, Spec WW-T-789, Bulkhead, triangle shape with rounded corners, approx 8" in length on any one side, material thickness .063", material alloy sheet 2014-0, Spec AMS-4028, alternate, aluminum alloy sheet 2024-0, Spec QQ-A-355. Skin, approx 21" L formed in triangle shape approx 8" on each side, .211" thick, material, aluminum alloy extrusion 6061-T6 or 6062-T6, type V, Spec WW-T-789, material for alternate configuration, aluminum alloy sheet 6061-0, Spec QQ-A-327, heat treat alternate configuration to T4 condition in accordance with Specification MIL-A-6088, age to T6 condition. Lug, approximately 2" long and approximately 2" in diameter, base threaded approximately 1/2", material, 4340 CR, N1, MO steel bar, Specification MIL-S-5000, treatment system 1.1.2.2, Specification MIL-171 RC 44 Maximum, zinc plate, Specification QQ-Z-325 class 2, type II or cad plate, Specification QQ-P-416, type II, class 2. Breech, Hex shape, 1.625" in width, thickness approximately 1", material, steel bar 4130, cold finish, Specification AMS-6370, alternate, steel bar C1112, B1112, or B111CF, Specification QQ-S-633. Nose Fairing, triangle shape 8" on each side, .063" thick, material, aluminum alloy sheet 2044-0, Specification AMS-4028, heat treat T42, Specification MIL-H-6088, alternate material, aluminum alloy sheet 2024-0, Specification QQ-A-250/5, heat treat T42, Specification MIL-H-6088, aluminum alloy sheet 6061-0, Specification QQ-A-250/11, heat treated T6, Specification MIL-H-6088. Cover Access, approximately 4" diameter, .05" thick, material, aluminum alloy sheet 2014-0, Specification AMS-4028, alternate, aluminum alloy sheet 2024-0, Specification QQ-A-355, heat treat to T42 in accordance with Specification

MIL-H-6088. Spring, approximately 5" free length, wire diameter .145" material, wire, steel, Specification QQ-W-470. Piston Body, approximately 2" diameter approximately 2" length, material, steel bar C1213, B1112, or B1113CF, Specification QQ-S-633. Plug End, approximately 1.5" long, diameter approximately 3", material, aluminum alloy, die casting alloy Number 380, Specification QQ-A-591. Plate, triangle shape approximately 10" on each side, .25" thick, material, aluminum alloy 2024 T351 or T4, Specification QQ-A-355, alternate, steel low carbon sheet on strip CRCQ 66000 PSI minimum tensile. Rod, approximately 50" long, .375" diameter, thread one end approximately 1", material, steel bar, 4140, Specification MIL-S-5626, alternate AISI 4140 cold drawn steel, heat treat RC 44 to 47. Radhaz Assembly consists of terminal, capacitor, connector filter, cover and wire, electric. Several component parts such as adapters, inductor, jumper, receptacle, switch gasket and screws are required; various components require finishing and painting. This item is considered difficult to manufacture in accordance with drawing and specification requirements.

10575. DRIVE ASSEMBLY, FUZE ARMING, M44

Approximately 3" wide x 4" long assembled and consists of 37 component parts. The complete assembly consists of powdered metal bearing, plates, arming wire, rivets, springs, shafts, pinions, ball thrust, bearing thrust, washers, and worm gears, fabricated from steel sheet and strip, stainless steel ball, steel rod, music wire, copper beryllium alloy strip, phosphor bronze sheet and strip, phosphor bronze rod, steel tubing, aluminum alloy die casting, and silicone rubber, by turning, boring, drilling, reaming, tapping, stamping, forming, punching, tumbling, plating, staking, crimping, and surface treating. Manufacturing firms bidding on this item will require a competent technical staff of engineers, metallurgists, tool engineers, to design and maintain precision tools to produce precision parts. This item is considered difficult to produce in accordance with specifications.



ORD D1309

DRIVE ASSY, FUZE ARMING, M44





10532. FIN ASSEMBLY, M2

2.375" D x 2.535" L and consists of two components, Cartridge Container, .94" D x 2.420" L, one end has .658" D bore extending to depth of 1.86", with .75 18NS-2B internal threads, .4" minimum depth, and a .830" D x .066" D counterbore. The other end has a shoulder 3.65" from end and is threaded externally .625-18UNF-2A x .265" L. Sixteen .1865" D holes extend radially through the sidewall into the .658" D cavity at various locations, material, steel bar, carbon, CF, Grade 1137, Spec ASTM A108, Fin .0625" thick x 1.90" L, single piece construction consisting of two blades and a hub area. Blades are .718" W, 52 degrees apart and slotted .20" W x .82" L. Hub area contains two .25" D holes prior to forming of the .47" hub radius. Four fins per assembly are located on 90 degree centers and copper brazed to cartridge container. Final protective finish, Spec MIL-STD-171, finish number 5.1.1 and 20.1, olive drab number X34087. The fin assembly is considered not difficult to produce.

10536. FIN ASSEMBLY, M131 w/CRATE AND LUGS

Is approx 38" L x 22" W from tip to tip of opposite Fins. This assembly is composed of eight sheet metal components, a solid ring and miscellaneous nuts and screws. The eight sheet metal components can be made of steel either commercial quality ASTM 366 or cold-rolled ASTM 109. These eight components are: Cone Assembly (1) is shaped as a truncated cone, approximately 16.3", which has various tapped holes; Cover Plates (2) are 16.3" L trapezoid which is curved to fit the above cone; Cup Joint (1) is a cup approx 9.4" in diameter and 2" D; Cover Plate (2) is an oblong plate 4.72" L and with two holes; Fin Blade Assembly (1) consists of a truncated cone 21" L, with diameters of 9.4" and 4.4", and having four fins 90 degrees apart; Closing Disk (1) is a 4.28" D disk with eight holes. The Fin Ring can be made from either seamless steel pipe ASTM-A53 or cold-rolled steel bar 1015-1025 and is approx .14.1" OD with eight tapped radial holes and eight longitudinal holes. Lug, Bomb, Suspension, MAU-76/A, eyebolt design, 2.42" L, 1-3/4" - 12UN-3A full thread at base, approx thread length, .875", thread relief at top and chamfered at base, eyebolt hole broached 1" L x .72" W, 125 finished required on top of broached hole must be maintained. Material, 4340 CR-NI-MO Steel Bar, Spec MIL-S-5000, zinc plating, Spec QQ-Z-325, Class 2, Type II, or Cadmium plating, Spec QQ-P-416, Type II, Class 2. Testing is severe, material free from seams, laps, etc., and inspected by Eddy Current Method or equivalent, each sample shall withstand a load of 27,000 pounds in direction /W/ with all permanent deformation and a load of 35,000 pounds in the same direction without rupture. Each sample shall withstand a load in direction /X/ of 18,000 pounds without permanent deformation and a load of 24,000 pounds in the same direction without rupture. Each sample shall withstand a .10 deflection measured at the center of the crossbar in direction /Y/ without rupture. Each sample notched as

required shall accept on impact load of 200 foot pounds applied in direction /Z/ without failure, Test loads to be applied on simulated bomb rack hook fixture, each lug must be magnetic particle inspected in accordance with Spec MIL-I-6868, MIL-STD-105 shall apply to sample, no defects allowed. This item is considered extremely difficult to manufacture. Crate, the crate required with this assembly is sometimes a wire bound one and sometimes a metal one. The manufacturer of this assembly should have an excellent forging source for the lug forgings and experience at drilling radial holes and at fabricating sheet metal.

10258. FERROMANGANESE

Is to meet requirements of Specification QQ-F-145 dated 30 April 1964 for Standard Type, Grade C. Material is to be in the form of lumps approximately 4" in diameter. Packaging is to be in accordance with level A of Specification PPP-C-301

10257. FERROSILICON

Is to meet requirements of Specification QQ-F-145 dated 30 April 1964 for Grade E. Material is to be in lump form, with a minimum of 90 percent passable through a screen having 4" openings and a maximum of 10 percent passable through a screen having 1/2" openings. Packaging is to be in accordance with level A of Specification PPP-C-301.

04822. FIN, M4A1, METAL PARTS ASSEMBLY

6.12" long x 3.181" maximum diameter, consists of 2 components, Shank, 6.045" long x 1.17" maximum outside diameter with a .0230 basic taper per inch on diameter for approximately 3.33" of the length, an 8-16NS-2A thread and a .436" diameter axial hole .42" deep on one end with a 1.01" diamond knurled outside diameter and a 2.9" deep x .801" diameter axial hole on the opposite end, the .801" hole contains a .875-18NS-2B thread to a depth of approximately .755", material, aluminum alloy rod 2011-T8, Specification QQ-A-225/3A, Fin, 3.181" maximum diameter by approximately 2.08" long consists of 12 blades approximately 1.085" high and tapering in thickness from .12" to .08", material, aluminum alloy, Composition 2, Specification QQ-A-591. This fin is die cast on to the shank. Three circumferential rows each containing six .218" diameter flash holes are drilled through the shank into the .801" diameter cavity. This item is not considered difficult to produce.

04830. FIN ASSEMBLY, M141

Approximately 3.19" diameter x 7.35" long and consists of (3) component parts. "HOUSING, CARTRIDGE" 1.693" major diameter tapered to .87" minor diameter. Overall length 5.88". The small end is machined to

.625" diameter 1.15" long to a shoulder. The .625" diameter is threaded .92" length 18 thread per inch. The large end has a two step counterbore. First counterbore 1.065" diameter .85" deep and threaded 18 thread per inch .73" deep. Second counterbore .80" diameter extends 1.92" deep with a .12" diameter hole through the entire length. (20) .196" diameter flash holes machined through the sidewall into .80" diameter counterbore. Material, aluminum alloy, rod, extruded C G42A-T4 ASTM B221 or B211. Alternate, aluminum alloy, die forging, CS 41A-T6 ASTM B245. "FIN" one piece design 3.19" diameter x 2.58" long with (6) fins inclosed by an integral rim. The bore diameter is .625" and threaded and counterbored at both ends. Material, aluminum alloy, die casting composition Al3, specification QQ-A-591 or aluminum alloy, rod extruded C G41A-T4 ASTM-B221 or ASTM B211. "HOLDER INCREMENT (REAR)" 1.24" diameter x .65" bore x .035" thick. Stamping with 8 eyes equally spaced. Material, carbon, steel strip, cold rolled, temper No. 4, Specification ASTM-A109. Protective finish, cadmium or zinc plate. The Fin Assembly is considered somewhat difficult to produce in accordance with specifications.

10616. FIN ASSEMBLY, M148, WITH BOMB LUGS

Approximately 20" long x 22.8" wide, 90 degrees between fin blades, with a 11.25" developed center top diameter of a truncated cone tapered to base of fins for 16.25". Fin segments, four (4) each, 20" long x 11.3" wide, tapered upper section, the four segments are cemented together with plastic cement and riveted together with 68 rivets, material glass fiber reinforced polyester resin, approximately 30 percent glass and 70 percent resin mixture, multi-ply layup and curing in matched heated metal male and female molds, and placed in cooling jig to control warpage, material must meet extensive physical properties, specific gravity, Barcol hardness, impact strength, flexural strength, flexural modulus, tensile strength, compressive strength and water absorption, construction procedure is controlled by drawings and specifications, final assembly has additional commercial hardware. Bomb lugs two (2) each, suspension approximately 2.4" high x 1.75" diameter with rectangular hole in top, bottom 1.75", 12UN-3A thread, material, 4340 chromium, Nickel, Moly steel bar, Specification MIL-S-5000, forged Fin Assembly packed in a wirebound crate. Contractor must provide and maintain an effective quality assurance system in accordance with applicable specifications. This item is considered very difficult to manufacture to meet applicable drawings and specifications.

10110. FIN ASSEMBLY, M149

Approximately 3.19" diameter x 7.35" long and consists of 3 component parts. HOUSING, CARTRIDGE 1.693" major diameter tapered to .87" minor diameter. Overall length 5.88". The small end is machined to

.625" diameter 1.15" long to a shoulder. The .625" diameter is threaded .92" length 18 thread per inch. The large end has a two step counterbore: First counterbore 1.065" diameter .85" deep and threaded 18 thread per inch. .73" deep. Second counterbore .80" diameter extends 1.82" deep with .12" diameter hole through the entire length. (20) .196" diameter flash holes machined through the side-wall into .80" diameter counterbore. Material, aluminum alloy, rod, extruded C G42A-T4 ASTM B221 or B211. Alternate, Aluminum alloy, die forging, CS 41A-T6 ASTM B247. "FIN" one piece design 3.19" diameter x 2.58" long with 6 fins. The bore diameter is .625" and threaded and counterbored at both ends. Material, aluminum alloy, die casting composition Al3, Specification QQ-A-591 or aluminum alloy, rod, extruded C G42A-T4 ASTM-B221 or ASTM-B211. "HOLDER INCREMENT (REAR): 1.24" diameter x .65" bore x .035" thick. Stamping with 8 eyes equally spaced. Material, carbon, steel strip, cold rolled, temper No. 4, Specification ASTM-A109. Protective finish, cadmium or zinc plate. The Fin Assembly is considered somewhat difficult to produce in accordance with specifications.

09874. FIRING KIT, DEMOLITION, ELECTRICAL, XM147E1

The complete assembly is approximately 13.5" long x 15.5" wide x 14" high, assembly is mounted in a three section case. Lid cover, (base section), formed shape, 13.5" long x 15.5" wide x 1.562" high x .09" thick, welded at 4 corners, material, aluminum alloy sheet, 5052, temp H32. Block, 2 each, mounting, 6" long x .85" wide x .562" thick, four holes drilled and tapped for helical coil inserts, 1/4". Flange, 2 each, L shape, approximately 15" long x 9/16" wide x 3/8" thick. Flange, 2 each, L shape, approximately 13" long x 9/16" wide x 3/8" thick, material, flanges, aluminum alloy, 5052, temp H32. Catch, 4 each, luggage type, approved source. Seal, 61" long, special shape section, material, rubber extrusion, approved source. Cover, assembly wrap around (body), 13.5" long x 15.5" wide x 10.69" high x .09" thick, welded seam 10.69" long, material, aluminum alloy, sheet, 5052, temp H32. Lid, cover, formed shaped 13.5" long x 15.5" wide x 1.562" high x .09" thick, material, same as above. Lid is welded to wrap around to form cover. Bracket, angle, battery, formed shape, 10.3" long x 3.1" wide x 2.2" high, material, same as above. Bracket, angle, galvanometer, formed shape, 4.9" long x 4-1/4" wide x 3.1" high x .09" thick, material, same as above. Handle, bow, 2 each, aluminum, approved source. Post, 5.2" long x .51" square with 1/4" drilled & tapped hole, material, aluminum alloy, bar, 5052, temp H32. Post, stud, 6-7/16" long x .51" square with 1" long threaded stud on end, material, same as above. Shelf, electric, storage, assembly, shelf, formed shape 14.25" long x 1/8" wide x 7/8" high, material, aluminum alloy, sheet, .09" thick, 5052, temp H32. Support, 5" long x 2-1/4" wide x .09" thick, formed shape, material, same as above. Support, 14-1/4" long x 3-1/4" wide, formed shape, material, same as

above, plus strap angle, handle grip, and hinge, 14-1/4" long, all parts assembled by welding together to form electrical shelf. Reel, assembly cable, Disk, 2 each, 8.5" OD x .063" thick, with 1.5" center hole, material, aluminum alloy, sheet, 5052, temp H32. Shaft, fabricated assembly Tube, 11.44" long x 1.56" OD x 1.25" ID with .63" diameter hole, material, aluminum alloy, 6061 tubing, T6. Extension, shaft, 1.56" long x 1.235" OD one end, 1/2" thread opposite end, material, aluminum alloy, 6061, T6. Insert, 1.235" OD x 7/8" thread ID x .562" long, material, same as above. Shaft formed by welding insert and extension into tube. Discs, 2 each, welded to shaft to form reel. Screw, shoulder, .97" long x .437" x .213" head, with 1/4" thread end, material, stainless steel, class 304. Screw, thumb, head, .68" long x 1/2" wide with 10-32 UNF screw threaded end, material, same as above. Stop, .60" long x head 1/02" x .26" thick, body diameter .26" OD, material, nylong, plastic rod. Flange, 2 each, L shape, approximately 15" long x 3/4" wide x 7/16" thick. Flange, 2 each, L shape, 13" long x 3/4" wide x 7/16" thick, material, flanges, aluminum alloy, 5052, temp H32, Nut, knurled, .76" OD x .625" long, ID threaded, material, stainless steel, class 304. Holder, 6" long x 176" wide x 1/4" thick with 2 holes and U slot near end, material, aluminum alloy, 5052, temp H32. Bracket assembly, cable reel, 3 components: Bracket, 2 angle, triangular, leg, 5.77" long x 6" wide with 1-3/4" hole drilled at top, base leg 1-1/4" wide x .19" thick with 2 oblong holes drilled in base, material, aluminum alloy, 5052, temp H32. Bearing, sleeve, modified, 2.06" OD x .187" wide flange with 1.75" OD x .538" long, body, 1.5" ID, material, bronze approved source. Brace, triangle, 3" long x 1" base, material, aluminum alloy, 5052, H32. Bracket and brace welded and bearing inserted in 1-3/4" hole. Crank assembly, hand, 8 components. Handle, 5.82" long x .76" wide square with 3/16" drilled hole and curved slot near one end. Strap, 3.62" long x 1.26" wide x .19" thick, material, aluminum alloy, 5052, H32. Support, 1.58" long x 1.5" wide, irregular shape, material, same as above. Strap and support welded and assembled with 3 pins, special clip, rivet and handle. Firing control switch assembly, approved source. Cable assembly Special purpose electrical, 3 components. Cable, 205' long x .265" diameter stranded #18-3 conductor, material, approved source. Connector plug 2 each, military standard. Cable assembly, special purpose, electrical, branched #1 cable, 60" long x .245" diameter, stranded #18-2 conductor, approved source. Cap, plug, 1-1/4" OD x 1-3/8" long. Socket, octal, 1-1/4" OD x 7/8" long, material, cap and slug, approved source. Clamp, loop, U shape, .64" long x .035" thick x .41" wide, material, aluminum alloy, 5052, temp H32. Clip, 2 each, red and black, material, approved source. Tool bag, 15" wide x 12" long with 24" wrap around tie, 3 heat sealed pockets, material, plastic, .01" thick, film, transparent, flexible. Tape, insulating, electric, roll, 3/4" wide x approximately 3-1/4" OD approved source. Pliers, lineman, MIL-STD. Wrench, adjustable, MIL-STD. Tool bag, tape, pliers, wrench are contractor

furnished. Government furnished material, batteries, 3 dry cell, Galvanometer, type I, knife, electricians. Special tests, mechanical functioning and electrical functioning of the firing switch, leakage test of case lid and cover when assembled. An effective quantity assurance system shall be provided and maintained by the contractor as required by Specification MIL-I-45208. Manufacturing firms bidding on this item require a technical staff of engineers and technicians familiar with forming, fabricating and welding aluminum materials. This item is considered very difficult to produce in accordance with applicable specifications.

10222. FUZE, BD, M62A1E1, METAL PARTS.

The fuze is 3.556" long x 1.787" maximum diameter consisting of 21 components, Body, 2.585" long x 1.378" in diameter, 1.27-20MS-1A external thread on one end, a .65-28NS-1BLH internal thread on the opposite end, various bores and counterbores with a .72" maximum diameter slider hole bored in the side of the body at an angle of 75 degrees from the longitudinal axis of the part, material, steel, bar, round, grade 1117 or 1118, Specification ASTM A108, Head, 1.285" long by 1.787" maximum diameter, contains a 1.19-20NS-1A and a 1.5-12NS-1A LH external thread, various bores and undercuts, material, steel C1137, Specification ASTM A108, Slider, .73" long x .73" x .486" maximum diameter including an eccentric portion which is approximately .5" long x .297" in diameter with a .110" diameter through hole at an angle of 75 degrees with the longitudinal axis of the part, material, brass, rod, Specification ASTM B16 or brass, sintered, Class B, Specification ASTM B282; Holder, Detonator, .226" long x .65" diameter, .65-28NS-1A LH external thread, contains various bores, material, steel, bar, round, Grade 1010 or 1020, Specification ASTM A108. Percussion Plunger Assembly, consisting of 9 components as follows, Body, Plunger, .718" diameter x .640" long with several drilled holes and a machined slot, material, brass, rod, alloy No. 6, No. 7 or No. 8, ASTM B134, Housing Plunger, cup-shaped, .875" diameter x .530" long with .245" center hole, material, steel, bar, round, Grade 1010, 1020 or 1117, ASTM A108, Pin, firing, .512" x .422" x .147" thick with machined tapered point and various size drilled holes, material, brass, strip, half hard, alloy No. 6, 7 or 8, ASTM B36, Pin, .076" diameter x .190" long, material, brass, rod or wire, half hard, ASTM B16, Pin, Safety, .268" long x .189" diameter, material, brass, rod, ASTM B16 or brass wire, alloy No. 6, 7 or 8, ASTM B134, Fulcrum, Firing Pin, .670" long x .076" diameter, material, steel, bar, round, Grade 1117, 1118 or 1035, ASTM A108, Spring, Safety Pin, coil, .185" maximum O.D. with solid height not over .08", material .009" diameter, brass, wire, spring temper, alloy 6, ASTM B134, Ball, commercial drawing MS 19060-1, 2 each required. Cup, Booster, drawn cup, 1.370" diameter x .340" deep, material, brass, strip, alloy No. 6 or 8, ASTM B36, Screw, Retaining .63" diameter x .350" long with two step inside diameters, material, brass, rod, ASTM B16 or brass,

wire, alloy No. 6, 7 or 8, ASTM B134, alternate material, zinc alloy die casting, ASTM B86, Spring, Restraining, coiled, ends closed and ground, .858" O.D. x .18" solid height, material, steel, wire music, spring, ASTM A228, Spring Slider, coil, .39" maximum diameter with each end reduced to .29" minimum diameter, solid height .105" maximum, material, steel, wire music.

10625. FUZE, PD, M525, LESS HEAD ASSEMBLY, METAL PARTS

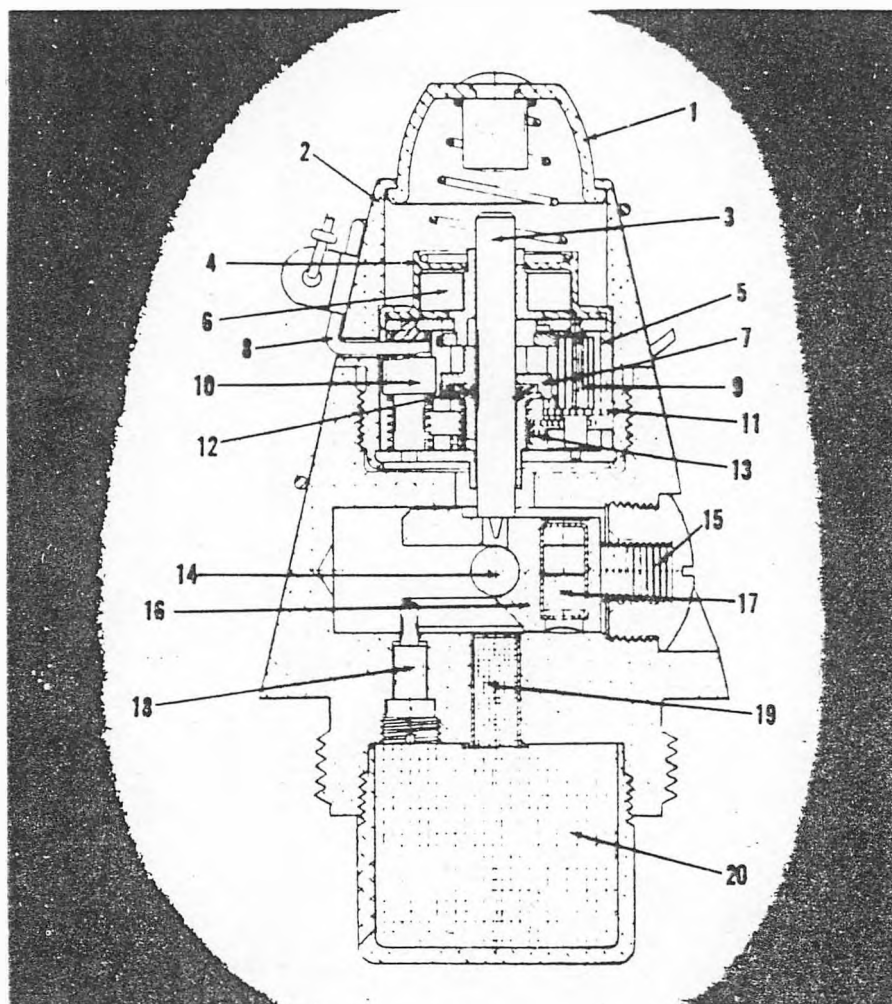
Consists of 13 components, the major components are Body, truncated cone, 1.77" long, maximum O.D. of 1.93", 1-1/2" - 12 thread on the outside of the base with a 1-1/8" - 20 thread in the nose, various holes, bores, counterbores and threads, material, aluminum alloy rod, T4, ASTM B211 or 2011, T3, ASTM B211, alternative material, aluminum alloy, casting, alloy SC 84A or B, ASTM B85 or aluminum alloy, permanent mold, casting, alloy, SC 64D, ASTM B108, Pin, Safety, 1.55" long, shank diameter of .198", .343" head diameter, material, brass rod, ASTM B16, alternate material, for upset or cold heading only, steel bar, 1010 or 1020, as cold finished, ASTM A108, Pin, Slider, Guide, .575" long, slotted head with 1/4-28 thread on O.D., material, steel, bar, cold finished, 1117, 1212, 1213, ASTM A108, Cup, Booster, .83" long, 1.128" O.D., wall thickness varies from .110 to .064", 1-1/8 - 2- thread on O.D. for approximately .225" at top of cup, material, aluminum alloy die casting, Composition S12B, S12A, or SC84A, ASTM B85, alternate material, aluminum alloy sheet, 1100, 3003, or 5052, ASTM B209, Slider, .83" long, .462" in diameter, various slots, holes, material, aluminum alloy rod, ASTM B211, smaller components consist of three helical springs, two plugs, a pin, and a safety wire. This item is considered difficult to produce in accordance with the applicable specifications.

10225. FUZE, BOMB, NOSE, M904E2, METAL PARTS ASSY

Has a built-in timing device. The complete assembly is approx 7" long x 2-3/4" D. The assembly consists of 90 components shown on 92 drawings including sub-assembly drawings and 30 applicable specs. The body is produced from aluminum alloy bar stock 2-3/4" diameter x 5-3/8" L. Machining is being performed on automatic screw machines by turning, threading, boring, reaming, and grooving. Followed by milling, drilling, reaming, counterboring, and threading. The timing mechanism assembly consists of bushing, pins, plates, rings, rotors, collars, springs, screws, steel balls, washers, gears, pinions, shafts, posts, spacers, rivets, and a ball thrust bearing manufactured from aluminum bars, rods, aluminum die casting, brass rods and strips, cellulose acetate, steel bars, sheets, stainless steel, tubing, stamping, and music wire. All components are produced to close tolerances. Manufacturing firms will require a highly competent technical staff consisting of engineers, metallurgists, technicians, and tool design engineers to fabricate and maintain precision tools for production of precision parts and assemblies. This fuze is considered



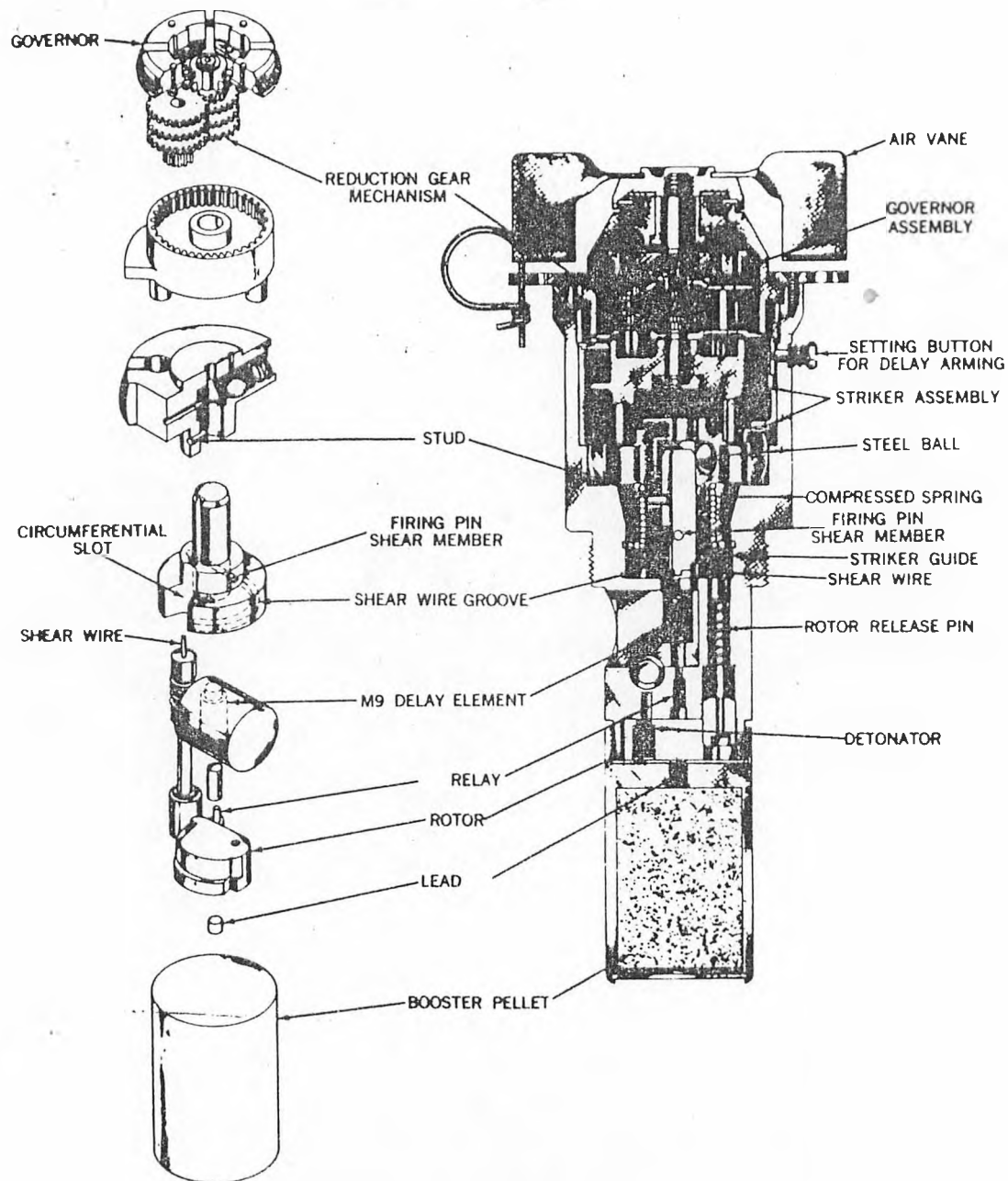




CROSS SECTION OF PD FUZE, M525

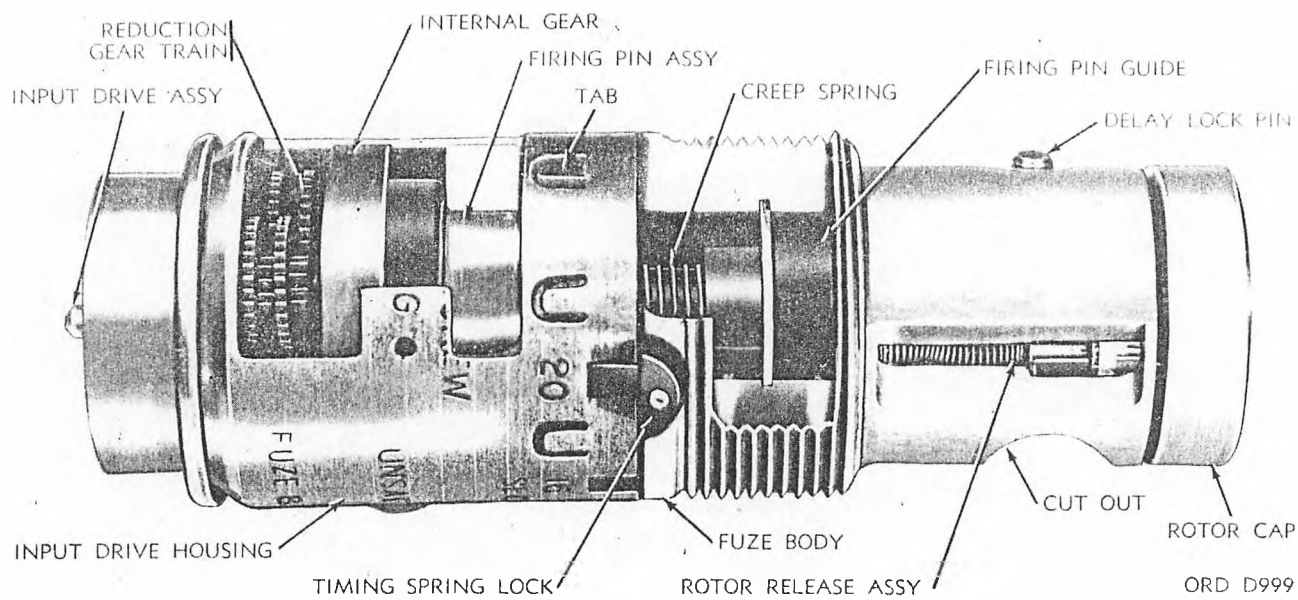
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|--------------------------|----------------------------|
| 1. Striker               | 11. Gear Train             |
| 2. Head                  | 12. Spring-Grip Washer     |
| 3. Firing Pin            | 13. Withdrawal Spring      |
| 4. Upper Release Bushing | 14. Bore-Riding-Safety Pin |
| 5. Housing               | 15. Slider Spring          |
| 6. Mainspring            | 16. Slider                 |
| 7. Lower Release Bushing | 17. M44 Detonator          |
| 8. Pull Wire             | 18. Setback Pin            |
| 9. Clockwork Mechanism   | 19. Booster Lead Charge    |
| 10. Setback Sleeve       | 20. Booster Pellet         |





**M904 E2, BOMB NOSE FUZE**





FUZE, BOMB, TAIL, M905 MPTS



complicated and difficult to manufacture to meet specifications and requirements.

10377. FUZE, BOMB, TAIL, M905 MPTS ASSY

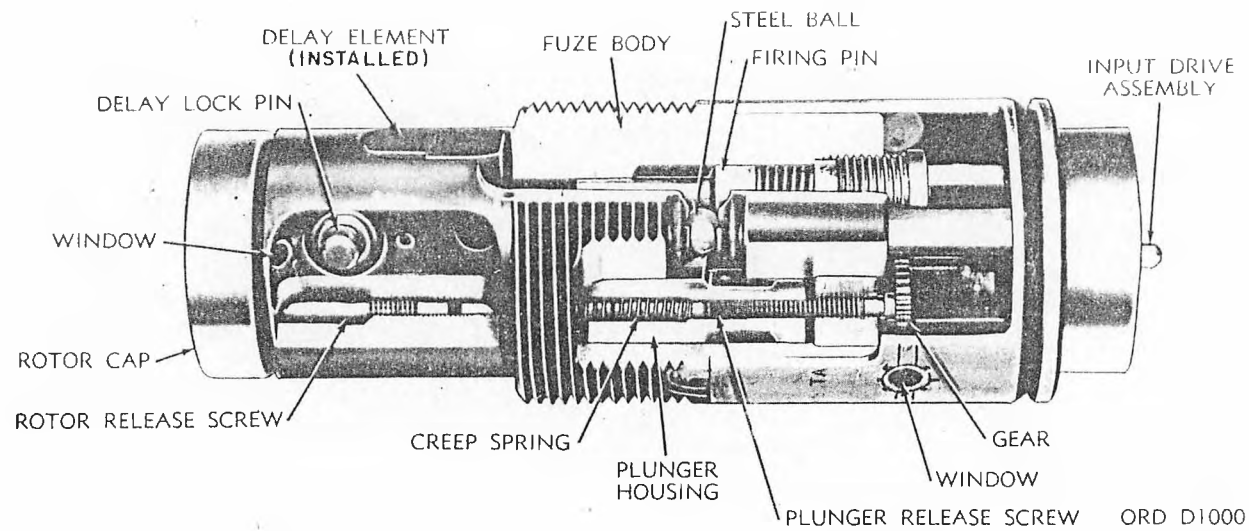
Has a built-in timing device. The complete assembly is approx 6" L x 2" D. The assembly consists of 50 components depicted on 54 drawings including sub-assemblies drawings and 25 separate specifications. The body is produce from aluminum alloy bar stock 2" D x 4-1/2" L. Machined on automatic screw machines by turning, threading, grooving, boring, and reaming followed by milling, drilling, reaming, counterboring, and threading. The housing is made from aluminum alloy, bar stock or impact extrusion approx, 2-1/8" x 3" L. The machining operations consist of turning, boring, drilling, reaming, punching, and milling. The timing assembly mechanism consists of pins, rings, rotors, collars, plungers, springs, washers, internal gears, pinions, bushings, shafts, screws, and rivets manufactured from aluminum, die casting, brass, cellulose acetate, molded plastics, steel, stainless steel, and music wire. All items are produced to close tolerances. Manufacturing firms should have a highly competent technical staff consisting of engineers, metallurgists, technicians, and tool engineers to design and maintain precision tools for production of the precision parts and assembly. This item is considered very difficult to manufacture to meet specifications and requirements.

10448. FUZE, BOMB, TAIL, M906, METAL PARTS

Assembly is approximately 6.0" long x 2" diameter and consists of approximately 45 components aprts. The major components are, Body, 4.39" L x 2" D, material, aluminum die casting or bar stock fabricated by turning, boring, milling, drilling, reaming, threading and counterboring, protective finish anodic film, Housing, 2-3/4" long x 2" diameter, cup shape, material aluminum alloy 6061F finish by machining, boring, drilling and slotting, protective finish anodic coating. Other miscellaneous components consists of washers, screws, rings, plungers, firing pins, springs posts, screw plugs, pins, brass gears and pinion shafts, fabricated from steel strip, steel rod, hex steel bars, 303 stainless steel rod, aluminum alloy rod and sheet, music wire and cellulose acetate plastic, using automatic screw machines, punch presses, milling and drilling machines, reaming, threading, slotting equipment followed by heat-treatment, plating, and painting. Most components require close tolerance. Manufacturing firms will require a highly competent technical staff consisting of engineers, metallurgists, technicians and tools engineers to design and maintain precision tools for production of precision parts and assemblies. This item is considered complicated and difficult to produce in accordance with applicable specifications and requirements.







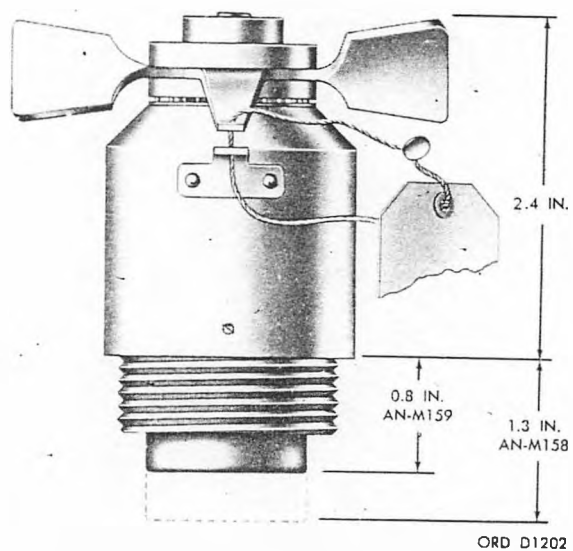
FUZE, BOMB, TAIL, M906 MPTS

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10487. FUZE, BOMB, NOSE, AN-M158, MPTS

Diameter, 1.75" x .325" L, with sub-assemblies. Arming Mechanism, consists of Arming Hub, .885" L x .76" on flange D, by .701" on body D, with .433" ID full length, with a .625-40 UNS-1A thread on small end, material, free cutting brass rod, ASTM B-16. Gear, Stationary, .875", OD x .067" thick, gear tooth form .8333 reference pitch D with .594" ID, material leaded brass strip alloy No. 3,4 or 5 temper hard, ASTM-B-16, alternative material, corrosion resisting chromium steel, sheet or strip No 410, heat treated to Rockwell C-30 to 36, ASTM-A-176 or No. 301, 302, 1/4 hard temper, ASTM-A-177. Firing Pin Striker Assembly, consisting of Pin, Firing, 2.155" L x .188" D, with point cut on a 26 degree angle, material, cold finished carbon steel, bar, 1018 to 1022, 1115 to 1118, 1212 or 1213, ASTM-A-108. Striker, .682" D x .180" W with a .127" center hole, material, cold rolled carbon steel, strip, temper No. 1, Finish No. 2, ASTM-A-109, alternative material, cold finished carbon steel bar, 1018 to 1022, 1115, 1118, 1212, or 1213 ASTM-A-108. Arming Sleeve Assembly, consisting of, Sleeve, Arming, .945" L x .420 OD with a .46 - 40 UNS-1A thread in center on the OD with various counterbores and wall thickness, material, free cutting brass rod, ASTM-B-165. Gear, Movable, .875 D, x .067" thick, with a gear tooth form, .8333 reference pitch D with .366 ID, material, leaded brass strip, alloy No. 3,4 or 5, temper hard, ASTM-B-121 or brass sheet or strip, alloy No. 6 or 8, temper hard, ASTM-B-36, alternative material, corrosion resisting chromium steel, sheet or strip No. 410, heat treated to Rockwell C-30 to 36, ASTM-A-176 or No. 301, 302, 1/4 hard, temper, ASTM-A-177, Booster Cup, 1.07" L x 1.01 OD x .940 ID, with 1.1 - 20 UNS-1A thread at top of OD, material, aluminum alloy, ASTM-B-209, B211 or B221. Body, 1.752" D x 1.775" L, with various bores and counterbores, thread 1.5 - 12 UNF-2B on ID, materials, aluminum rod, 2011, T8, 2017, T4 or 2024, T4 ASTM-B-211, alternative material, aluminum alloy rod, 2024 T4, ASTM-B-221 or alternate material cold finished carbon steel, Bar 1112 to 1115, or 1015 to 1035, ASTM-A-108. Cage, Outer Ball, 1.156" OD, .685" ID x .032" thick, 9 holes, .10 equally spaced on a .918" D circle, material, brass strip, alloy No. 2,3,4,5 or 6, Half hard, ASTM-B-121, alternative material, brass strip or sheet, alloy No. 6 or 8, half hard, ASTM-B-36. Guide, Arming Wire, two /2/ each, base curved to fit body diameter at 30 Degrees on base circle, approximately 1/2" L x .20" W x .05" thick, with leg bent at 90 degrees, .20" W x approx .44" L, with two /2/ holes in base and lug, material, cold rolled carbon steel strip, temper No. 2 or 3, Finish No. 1, ASTM-A-109, alternate material, cold rolled carbon steel sheet, ASTM-A-366, Holder, Booster, cup shape, 1.367" L x 1.5 - 12 UNF-2A, thread OD for 1.037" L, with various bores and counterbores, plus an inside thread at open end 1.1 - 20 UNS-1B, 2 holes, 1/8 D .12" deep in base, one hole in base centered, 1.38" D concentric with inside thread x .005 /total indicator reading/, TIR, material, aluminum alloy bar or rod, 2017-T4,

2011-T8 or 2024-T4, ASTM-B-221, alternative material, carbon steel Bar, CF B1112, 1115 to 1118, 1137 or 1015 to 1035, ASTM-A-108 or alternate material, aluminum alloy bar, 2024-T4, ASTM-B-221, Nut, 1.156" D x .170" thick with .625-40 UNS-1B inside thread and two /2/5/32" drill holes, one optional, on face of nut, material, cold finished carbon steel bar 1117, 1118 or 1137, ASTM-A-108, alternative material, cold rolled carbon steel strip, temper No. 1, finish No. 2, ASTM-A-109. Pinion, .634" L, ID, .096", tooth form, .2083 pitch D, number of teeth 10, circular slot .104" cut thru teeth. 138" from one end, material, free cutting brass rod, ASTM-B-16. Race, Outer Ball, 1.156" OD x .198" thick, with .625"- 40 UNS-1B thread one side and .63"bore .09" deep thru other side, material, cold finished carbon steel, bar, 1117, 1118, or 1137 ASTM-A-108. Pin, Pinion .76" L x .094" D, tapered at one end, modify MS-16555-622, material, modification of MS part by changing length of taper on pin from 25% to 8% minimum. Ring Retaining, ID .155" x .0200 D wire, with cut out section .080" W, material music steel, spring wire, ASTM-A-228, alternative material, phosphor bronze, wire, alloy C or D, temper hard, ASTM-8-159. Spring, firing pin, .273" max OD x .196" ID x 1.70" L, wire diameter .032", total coils, 23, ends squared and ground, Material, music steel, spring wire, ASTM-A-228, heat treated and stress relieved. Tag, Seal, two /2/ and three /3/ fourth inches L x 1 and three /3/ eights inches W, material, shipping tag, paper, Type B, Class I. Grade 15 JU, 15 WO or 15 SU, Size No. 1 Spec UU-T-81, printed instructions. Vane, two large vanes bent at approx 60 degrees with two /2/ tabs bent at 55 degrees, center hole, .735" D x 1.16" OD hole, material, cold rolled carbon steel strip, temper No. 2 or 3, finish No. 1, ASTM-A-109, alternative material, Brass Strip, Alloy No. 1, ASTM-B-36. Disc, Lead, Cup, 1.04" OD x .286" thick x .956" outside base D with center hole .172" D, concentric with both IDs, center hole countersunk .020" with 63 finish on top face of disc, material, free cutting brass rod, ASTM-B-16. Rotor, cam shape, .592" H x .70" L x .565" W, with 4 various D holes, material, Brass, sintered metal powder, Class B, ASTM-B-282, alternative material, Copper and copper alloy shapes No. 3 or No. 13, ASTM-B-124, powdered metal rotors require a manufacturers' identification symbol. Pin, Rotor, .795" L x .093" D, knurled at one end, material, hot rolled or cold finished stainless steel, 416T, ASTM-A-276, alternative material, wire steel, corrosion resisting, Class 416, Cond-B, Spec MIL-W-52263. Spring Rotor, .125" ID with ends 180 degrees apart, .756" point to point, wire diameter .0220", nine /9/ total coils, stress release to remove embrittlement after plating, material, music steel spring wire ASTM-A-228, alternative material, wire, spring, steel, stainless, chromium nickel, ASTM-A-313. Sleeve, Detent, .208" L x .0975 ID, x .1500" OD, material, brass rod, free cutting, ASTM-B-16, alternative material, brass tube, seamless, Alloy No. 3,4, 5 or 6, ASTM-B-135. Pin Detent, shank .280" L x .093" D head, .143" D x .280" thick, material, free cutting brass rod, ASTM-B-16. Spring, Detent, .400 free L x .0100" wire D, total coils 10, active coils, 8, solid L .130" max, closed ends material, music steel, spring wire, ASTM-A-228, alternative



FUZE, BN, AN-M158 and M159



material, wire, spring steel, stainless, chromium nickel, ASTM-A-3B, stress release to remove embrittlement after plating. Pin, Spring, material, MS-111522. Screw, Drive, two /2/ each, material MS-21318-15. Balls, Bearing, 3/32 D, material, composition 2, Grade 50 or 100, 9 ea, Spec MIL-B-1083. Seal, Metallic approximate D, three /3/ eights /8/ x .5" thick, lead, embossed, with five alternative types. The component parts are finished (variable) in accordance with MIL-STD-171B. The unassembled parts, the rotor assembly, lead cup disc, the lead cup and the booster cup are shipped separately from the Parts Assembly. Quality Assurance procedure required and maintained shall be as defined in Military Specification MIL-F-60421 for Fuze, AN-M158. Firms manufacturing this item will require a highly competent technical staff of engineers, technicians and tool engineers to design and maintain precision tools to produce and test precision parts and assemblies. Fuze must be test-verified for spring embrittlement, protective finish salt spray test, etc., workmanship, torque, load pull, strength of retaining ring and thread lead and pitch test. The freeness of action and functioning tests shall be performed in a specified type wind tunnel. This item is considered difficult to manufacture in accordance with applicable specifications and should be considered by firms in the fuze manufacturing field.

10600. FUZE, PD, M91A2

Approx 4.2" L x 1.7" D consisting of 12 components. Body, approx 2.58" L x 1.378" OD, with external threads on one end and an internal thread on the opposite end, slider hole and counterbore entering side of body at 75 degrees from the longitudinal axis of the part, material, steel, bar, Grade 1117, Spec ASTM A108. Cup, Booster, drawn cup, 1.37" OD x .34" D, material, brass, strip, alloy number 6, ASTM B36. Cushion, Detonator, washer shaped, .06" thick x .19" OD, material, cork, Class 3, Spec HH-C-576. Head, 1.72" L x 1.787" max D with external threads, various bores and undercuts, material, steel, bar, Grade 1137, ASTM A108. Holder, Detonator, .226" L x .65" OD, with external threads and various bores, material, steel, bar, Grade 1010, ASTM A108. Percussion Plunger Assembly, consists of 7 components. Body, Plunger, .718" D x .64" L with several drilled holes and machined slots, material, brass rod, alloy number 6, ASTM B134. Housing Plunger, cup-shaped, .875" OD x .53" L with .245" center hole, material, steel bar, Grade 1010, ASTM A108. Pin, Firing, .512" x .422" x .147" thick with machined tapered point and various sized drilled holes, material, brass, strip, half-hard, alloy number 6, ASTM B36. Pin, .076" D x .190" L, material, brass rod, half-hard, ASTM B16. Pin, Safety, .189" D x .268" L, material, brass rod, ASTM B16. Fulcrum, Firing Pin, .076" D x .67" L, material, steel, bar, Grade 1035, ASTM A108. Spring, Safety Pin, Coil, .185" Max OD solid height .08" maximum, material, .009" D brass wire, alloy number 6, ASTM B134. Screw, Retaining, .75" D x .350" L, material, brass rod, ASTM B16 or brass wire, spherical radius head on one end, other end machined counterbores. OD threaded. Slider, .73" L x .486



D, material, brass rod, ASTM B16 or brass, sintered, class B, ASTM B282, machined to two different diameters with one diameter having a drilled hole. Spring, Restraining, coil, .734 max OD, free height, .58" L, ends closed and ground, diameter of wire .048, 3-1/2 number of coils, material, steel music wire, spring, ASTM A228. Spring Slider, coil, .39" max OD, free height, .59", ends closed, diameter of wire, .018", material, steels music wire, spring, ASTM B228, 5 is total number of coil with 3 coils active. This item is considered somewhat difficult to manufacture in accordance with applicable specifications; therefore, the manufacturer will require a competent technical staff.

10729. FUZE SEAT LINER ASSEMBLY, FOR 1000# BOMB

4.39" L x 1.745" D, consisting of Liner, 4.31" L x 1.65" ID x 1.74 OD, material, steel strip, cold-rolled, temper No. 4 or 5, finish No. 1, ASTM-A109 or Carbon steel, hot rolled bar, 1015-1035, ASTM-A107 or cold drawn, carbon steel, 1112-1118, ASTM-A108, Collar, 1.745 ID x .36" W with outside thread 2.00-12 UNS-1A material, steel tubing, seamless, round, grade MT 1010-MT 1020 or 1025-1035, Spec ASTM-A519 or welded tubing, Spec QQ-S-643, Liner and Collar brazed together, using Brazing Filler metal type BAg-1a, Spec ASTM-B260 with brazing flux, Spec O-F-499, Finish 1.9.2.3 or 1.1.2.3 of MIL-STD-171. Manufactured in accordance with Purchase Description PA-PD-2715 and Technical Data No. RDM-66-735 dated 1 April 1966. Liner may also be manufactured as a one piece assembly, drawn, machined or forged and machined, providing all drawing and specifications are met. Contractor must provide and maintain an effective Quality Assurance System in accordance with applicable specifications. This item is not considered difficult to manufacture to meet applicable specifications.

11273. FUZE, ROCKET, BD, M404A2 MPTS ASSEMBLY

3.478" L x 2" D, consists of 14 components, 3 major components, body 2.94" L x 2" OD. ID drilled to 1.187", both ends drilled and counterbored to .927" D and threaded, two holes drilled for ejection pin. Material: aluminum alloy rod 2001-T8 or 2017-T4 ASTM B211. Alternate material: aluminum alloy forging 2014-T4, ASTM B247. Alternate material: aluminum alloy extruded tube 2014-T6 or 2024-T4, ASTM B221. Activating plunger, 1.915" L x 1.182" D at one end x 1" D at other end. One end machined for firing pin assembly, hole drilled inside for detent and spring one end internally threaded. Material: cold-finished carbon steel 1212, 1213, or 1214, ASTM A108. Booster detonator holder 1.089" L x 1.41" D both ends drilled and counterbored for booster and detonator, externally threaded, two wrench holes drilled on top, bottom machined to accept plunger. Material: aluminum alloy rod 2011-T8, 2017-T4, or 2024-T4, ASTM B211. Alternate material: aluminum alloy extruded rod,

2024-T4 ASTM B221. Minor components consist of ejection spring, safety band, ejection pin, set back sleeve, sealing disc, detent spring, detent, firing pin. This item is considered difficult to manufacture. Firms bidding this item will require a highly competent staff of engineers, chemists, metallurgists, and tool designers.

11274. FUZE, ROCKET, DUMMY, M405 f/M29A2 PRACTICE 3.5"

3.42" L x 2.00" D various holes drilled longitudinally and vertically, one end threaded, other end drilled and counter-bored and internally threaded. Material of body: aluminum alloy, temper T4. Other components consist of ejection pin and spring spring detent, pin detent, pin set back plug. This item is not considered difficult to manufacture. Firms bidding this item will require a staff of engineers, chemists, metallurgists, and tool designers to produce in accordance with required ordnance specifications.

09898. FUZE, ROCKET, MT, M421

Approx 5.996" L x 3.31" in D, procured loaded with lead and detonator, consists of two mechanical timers bolted to a base ring. Each timer consists of a Housing, 2.675" L x 2.800" in D containing various bores, counterbores, drilled and tapped holes with a vernier scribed on a beveled segment on the upper edge of the outside diameter, material, aluminum alloy, ASTM-B210, B211 or B221, a Dial, .30" L x 2.122" in D, cup shaped, .025" stock, material, steel, corrosion resisting, ASTM-A167, Movement and Timing Disc Assembly, consisting of a Dial Body, approx .608" L x 2.140" in D, cup-shaped component with various size holes/ some threaded/ in the bottom and 94 involute teeth evenly spaced around the rim, material, steel, corrosion resisting, Class 416, Condition H. Spec QQ-S-763 or ASTM-A276, alternate material, steel forging, corrosion resisting, Class 414, Condition H, ASTM-A473, Timing Disc, approx .130" L by 1.375" in D, cup-shaped component, approx .036" wall thickness with various size holes drilled in the bottom, material, steel, corrosion resisting, ASTM-A167, A176 or A276, Movement Assembly, consisting of Mainspring Housing, approx .753" L x 1.775" in D, consists of various bores, counterbores, drilled and tapped holes, material, aluminum alloy, ASTM-B211, alternate material, aluminum alloy, forging, ASTM-B247, nine Plates, 1.375" in D and varying thickness from .0401" to .118", material, aluminum alloy, ASTM-B209 on two of the plates and brass, hard, alloy 2, 3, 4, 5 or 6, ASTM-B121 or alloy 4, 6 or 8, ASTM-B36 on the remainder, the movement assembly also contains an escapement gear and pinion assembly, escapement lever assembly, mainspring, mainspring arbor assembly, four gear and pinion assemblies. Each timer also contains in the housing a

Base Assembly, consisting of a Base-Casting, approx .730" L x .2550" in D containing 28 various sized holes, several tapped, counterbored and countersunk, also contains bosses, posts, cut-outs on the circumference, and milled areas of varying curvature and thickness, material, aluminum Composition 356-T6, Spec AMS 4260, alternate material, aluminum alloy, Composition 11, Spec QQ-A-591, Movement Assembly /Delay Mechanism/ consisting of an escapement gear and pinion assembly, 2 gear and pinion assemblies, lever assembly, inner plate assembly and an outer plate, Rotor Assembly, consisting of the M19A2 Detonator, a cushion and Rotor, approx 1.119" L, .600" W and .453" D, material, yellow brass, commercial, Composition B or C, Spec QQ-B-621, alternate material, brass, alloy Z30A, 1.25 - 1.75 percent lead content, Spec ASTM-B176, Coverplate Assembly, consisting of a Cover Plate, approx .950" max thickness and 1.678" L containing 31 various sizes holes /several tapped/, posts /one with an undercut/, counterbores and countersinks, material, aluminum, Composition 356-T6, Spec AMS 4260, alternate material, aluminum alloy, Composition 11, Spec QQ-A-591, 2 firing arms, 2 "D" shafts, a firing arm release, 2 pins, 3 small springs, a screw and washer complete the coverplate assembly, the base assembly also contains various other pins, levers, screws and springs. The two timers are stacked and bolted to the Base Ring, approx 3.310" in D and .361" L which has a 1.58" D through hole on the centerline, a .146" radial slot on the bottom, a .215" 45 degree chamfer on the outside top circumference and 4 small holes two of which are tapped, material, aluminum alloy, ASTM-B209, B211 or B221. The timer housing, base casting, cover plate and base ring each receive an anodic coating. The loaded fuze must withstand jolt, jumble, and forty-foot drop test, the inert fuze must withstand a transportation-vibration test. The base assembly and the movement and timing disc assembly must meet arming and non-arming requirements when subjected to a specified acceleration. Inert timers are required to meet non-arming, and accuracy requirements when subjected to a specified acceleration at ambient and when conditioned to plus 160 degrees F. and -40 degrees F. Each movement assembly must be regulated to meet an accumulated error of .04 percent or less on each of two consecutive runs of 120 seconds. This item is considered extremely difficult to produce in accordance with the applicable specifications.

09954. FUZE, GRENADE, XM218

Consists of /22/ components and /4/ assemblies. Lockweight, approx .194" L x .095" W x .168" H with various notches and radii, material, lead alloy, grade 10, spec QQ-T-390, coated with molybdenum disulphide, four required, M55 Stab Detonator, government-furnished, Rotor Housing, approx .956" D x .317" H with various sized holes and notches, material aluminum die casting, alloy SG-100B, spec ASTM-B85 /cold chamber process/, Rotor, approx .526" D x .161" thick with various holes and notches, material, aluminum alloy SG-100B, spec ASTM-B85 /cold chamber process/, Cover, .993" D x .549" D cup,

.016" wall thickness, material, steel, carbon, strip, deep drawing quality aluminum killed, soft skin rolled, spec QQ-S-698, protective finish number 1.9.2.2 or number 1.1.2.2 of MIL-STD-171, Overlay, .945" D x .240" D cup with .04" lip, .032" wall thickness, material, aluminum alloy, 2024 temper "0", spec ASTM-B209, protective finish number 4.3 of MIL-STD-171, Lead Cup Assembly, Lead Cup with RDX, government-furnished, Delay Housing, approx .956" D x .409" H with various size holes and notches, material, aluminum die casting alloy SG-100B, spec ASTM-B85, Delay Rotor, .70" D x .213" thick, material, aluminum die casting alloy, SG-100B, spec ASTM-B85, protective finish, electrofilm, number 4396, .002 to .005" thick per MIL-L- 8937, Rotor Latch, flat metal .044" W, .0045" thick, one end 90 degree twist and 112 degree hook, material, corrosion resistant steel strip, 301, 302, and 304, full hard, finish number 2 Spec QQ-S-766, Lever, "T" shaped, .237" L .181" W, .031" thick material, corrosion resistant steel strip, class 302, spec ASTM-A167, Firing Pin, .150" D face .021" thick, .072" D shank, .163" L with .066" W x .024" D tangential slot, firing point on face 26 degree angle .030" L, material corrosion resistant steel bar, cold finished, class 416, condition A or T, spec QQ-S-763, protective finish number 5.4 of MIL-STD-171, Firing Pin Spring, .717" L, .210" W, .010" thick, one end bent 36 degrees, one hole in each end, material, high carbon steel, 1095, condition A or H, spec MIL-STD-7947, heat treat to Rockwell C44-C52 /or 63-71 on 30-N scale/, /not required for condition H material/, protective finish number 3.3.1 of MIL-STD-171, Cover and Sac Assembly, /2/ components, Sac, covers .625" D area of housing cover, material, Schjeldahl Thermoplastic Strip Adhesive, GS-300, 50 gage with .50 mil resin. This item is considered very difficult to produce to ordnance standards and specifications.

05920. FUZE, GRENADE, M219E1

Consists of 18 components and 4 assemblies, Lockweight, approx .194" L x .168" W x .095" H with various notches and radii, material, lead alloy, grade 10, spec QQ-T-390, coated with molybdenum disulphide, four required, Lockweight Spring, approx .35" free height, 5 coils, .174" D, .005" wire diameter, material, steel, music spring wire, spec ASTM-A228, protective finish number 1.8.2 of MIL-STD-171, M55 Stab Detonator, Government-furnished, Rotor Housing, approx .956" D x .317" H with various sized holes and notches, material, aluminum die casting, alloy SG-100B, spec ASTM-B85 /cold chamber process/, Rotor, approx .526" D x .161" thick with various holes and notches, material, aluminum alloy SG-100B, spec ASTM-B85 /cold chamber process/, Rotor Shaft, .216" L x .104" D, material, brass, rod, composition 22, half hard, spec QQ-B-626, Cover, 1.997" D x .55" deep cup, .018" wall thickness, material, steel, carbon, strip, deep drawing quality QQ-S-698, protective finish number 1.9.2.2 or number 1.1.2.2 of MIL-STD-171, Overlay, .945" D x .240" Deep cup with .04" lip, .032" wall thickness, material, aluminum

alloy, 2024, temper "0", spec ASTM-B209, protective finish number 4.3 of MIL-STD-171, Disc Safety, .171" diameter .019" thick with .176" D hole, material, steel, carbon, strip, cold rolled untempered spring, spheroidize annealed, number 1095A, specification QQ-S-777 protective finish number 1.9.2.3 of MIL-STD-171, Lead Cup Assembly, lead cup with RDX, Government-furnished, Firing Pin Assembly, /2/ components, Firing Pin, .569" L x .131" W x .037" thick, material, steel, corrosion resisting, chromium, strip, type 430, cold finished, spec ASTM-A176, Firing Pin Spring, .948" D x .004" thick with various cutouts and notches, material, steel, corrosion, resistant, type 17-7, hard temper AMS 5529, minimum tensile strength 230,000 RSI, Centerplate, "Y" shaped, .956" D x .150 thick with various radii and cutouts, material, aluminum alloy, 6061, temper "0", spec ASTM-B209 heat-treat to T6 condition. Weight, .617" D x .265" thick with .158" D hole, material, zinc die cast alloy AG 40A, specialist ASTM-B86. This item is considered difficult to produce to ordnance standards and specifications.

10571. FUZE, MINE, COMB, M605, METAL PARTS

Is 4.44" long x approximately .94" wide with 3 assemblies and 22 components. Release safety pin assembly, consisting of standard ordnance eyelet cotter pin and 10" cord, material, commercial glazed curtain fixture #2 or commercial white 8 strand cotton cord. Pin, safety striker positive assy., 2 components, cord, 10" long, material, cord, linen, waxes, 6 ply and pin, safety striker, 1.0" long x .111" maximum diameter with 3 machined steps to minimum of .044" with holes drilled in diameters at each end, material, zinc base alloy, die cast, comp. B, alternate, aluminum alloy die cast, comp. 5, 5A, 10 or 11. Prong, 3 ea., 1.145" long x .075" long x .075" diameter with flats .078" x 1/16" wide, 1/8" from end of prong, material, steel, music wire. Head safety, .50" long x .285" diameter, drill thru .125" diameter with slot .075" x .09" long, material, aluminum alloy rod, condition T, alternate aluminum alloy die cast, comp. 5, 5A, 10 or 11, alternate zinc base alloy, comp. B. Pin, 1.9" long x .0360" diameter with .08" eye inside diameter at one end, material, steel, music wire. Pin, .98" long x .280" diameter with machined flat on side to .246" x .55" long, off center hole .312" diameter, and trunnion, .212" diameter x .425" long, material, steel, bar FSL117, CF. Trigger, 1.225" long x major diameter .665" step diameter .375" with .129" center hole tapered .226" on one end with .42" long flat on opposite end, material, zinc base alloy die cast, comp. B, alternate aluminum alloy die case, comp. 5, 5A, 10 or 11. Ring, release, 3/8" diameter O.D. with 2 projecting ends, approximately 2 full coils, material, steel, .048" diameter music spring wire. Spring, .194" diameter O.D. x 4 1/2 coils, free height .277", material, steel, .025" diameter music spring wire. Spring, .29" diameter O.D. x 18 1/2 coils, free height 1.473", material, steel, .045" diameter, music spring wire. Striker, 3.213" long x .26" diameter with collar .21" diameter with flats .150" wide and 2 flats

.076" across diameter at approximately 1.45" from 30 degree taper point. material, steel, bar, FS1117. Case, 2.13" long x .505" diameter with two stepped collar .755" and thread .4375" - UNF-1B plus thread .625" - 11 UNC-1A with .4375 inside diameter, material, zinc base alloy die cast, comp. B, alternate aluminum alloy die cast, comp. 5, 5A, 10 or 11. Washer, 8 point star shape, .368" diameter x .128" inside diameter x .0538" thick, material, steel strip, FS1009, CR, temper #2, finish #3, alternate, steel, strip, FS 1015 or FS 1020, CR, temper #4, finish #1. Gasket, .75" O.D. x .52" I.D. x .078" thick, material, synthetic rubber, sheet, type RS, 510BF2. Spring, .65" diameter O.D., 3 coils, free height .57", material, steel, .051" diameter, music spring wire. Plug, .348" O.D. tapered at 15 degrees x .13" I.D. x .173" thick. Housing primer, .87" long x .50" diameter with thread .4375" - 20 UNF-1A .115" long and thread .4375" - 20 UNF-1B .37" long, material, aluminum alloy rod condition T alternate, aluminum alloy die cast, comp. 5, 5A, 10 or 11, alternate, zinc base alloy, comp. B. Head, flash igniter, 1.4" long x .375" maximum diameter with one end thread, .4375" - 20 UNF-1A .05" to .24" long, center bores .199" diameter x 1" long and .101" diameter x .52" long, machined and double grooved on opposite end. Tube, cup shape, 1.44" long x .237" O.D. with .217" I.D. and .011" base wall, material, aluminum alloy, sheet, temper "0". This item is considered difficult to manufacture in conformance with specifications.

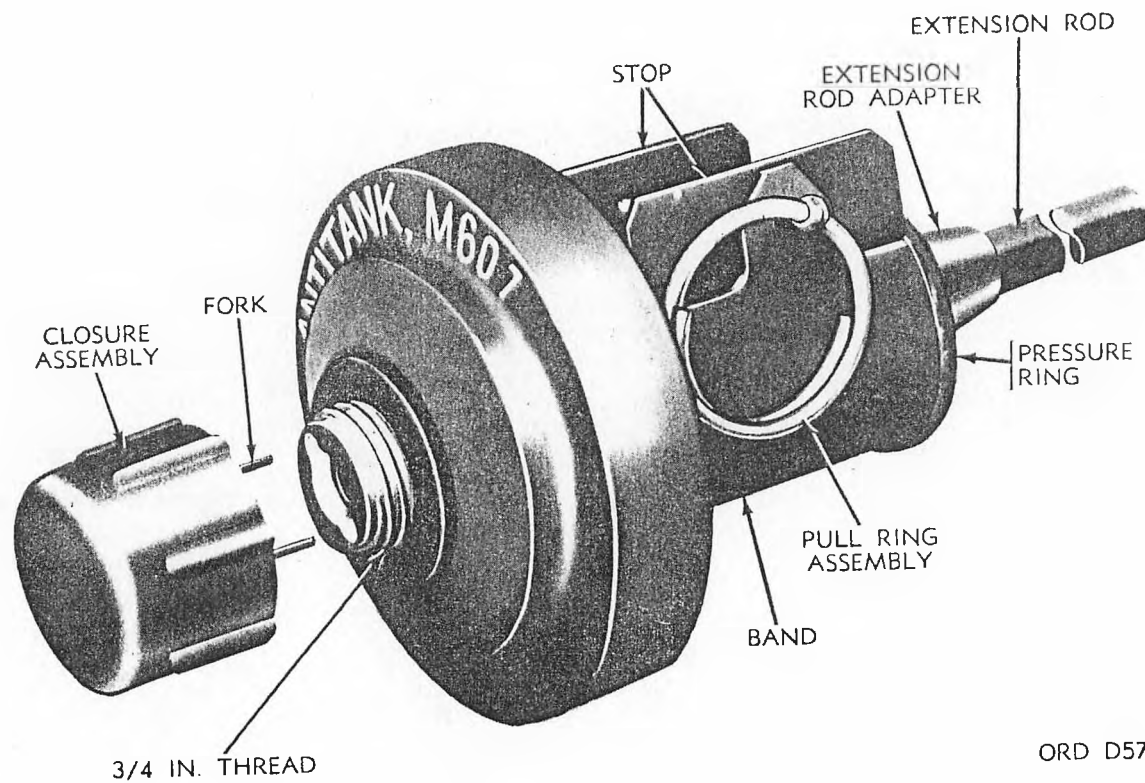
10525. FUZE, MINE, ANTI-TANK, NON-METALLIC, M606, ASSEMBLY

Is 10" max. OD x 2.7" high and consists of 25 components. Firing pin spring assembly, 4 components: Firing pin, .28" long x .109" OD, material, steel bar, 1117, ASTM-108. Firing pin assembly, formed shape .57" max. diameter x .341" high, material, plastic, polystyrene, Spec L-M 525. Firing pin molded into firing pin assembly. Collar, cup shape, .765" diameter x .439" high, material, plastic, polystyrene, Specification MIL-M-21347. Spring, 2 each, bellville, 1.995" diameter x 10 degree angle with .438" center hole, material, fabric, glass, woven, type I, Specification MIL-F-12298 and resin, Specification MIL-R-3745. Cord, (1 each 10.5" long) (1 each 20.5" long) material, cord, parachute, type B, Class A, Specification PA-PD-460. Gasket, O-ring, 1 each, 1.6" I.D. x .143" cross-section. 1 each, 7.945" I.D. x .281" cross-section, material, rubber, commercial, compound, approved source or equal. Well, detonator, cup shape, .378" O.D. x .243" I.D. x .38" high, material, plastic, polystyrene, Specification MIL-M-21347. Base, detonator well, hexagon flange .87" across flats x overall height .5" with outside thread 9/16" x .37" long, material, plastic, polystyrene, molded, Specification MIL-M-21347. Nut, hexagon, .38" across flats x .18" high, 1/4" inside thread, material, plastic, polystyrene, molded, Specification MIL-M-21347. Plug, flange, .87" x 1/8" thick with 9/16" threaded shank, material, plastic, polystyrene, molded Specification MIL-M-21347. Gasket, 3/4" O.D. x .51" I.D. x .05" thick, material, rubber, type R. class RS, 505B, F2, Specification MIL-R-3065. Screw

knob, setting, 1.23" O.D. flange x .128" thick with 3/4" threaded shank with hexagon center hole .37" across flats, material, plastic polystyrene, molded, Specification MIL-M-21347. Gasket, 9.95" O.D. x 9.02" I.D. x .12" thick, material, rubber, type R, Class RS, 505B, F2, Specification MIL-R-2065. Spring, formed shape, 2" long x .084" thick with varying formed contour material, fabric, glass, woven, type I Specification MIL-F-12298 and resin, laminating, Specification MIL-R-3745. Clip, contour "U" shape 2.29" wide x 2.2" long x .0598" thick, material, steel strip, T2, ASTM A109. Plate, angular section, approx. 44 degrees x .95" radius one end to .3" radius opposite end x .27" thick, molded with flanges and lug extensions, material, plastic, polystyrene, Specification MIL-M-21347. Knob, setting, 1.985" diameter x .83" thick, with slots and various bores, molded, material, plastic, polystyrene Specification MIL-M-21347. Spider, 2" O.D. x .44" to .63" height, with various bores, slots, counterbores, etc., molded, material, plastic polystyrene, Specification MIL-M-21347. Support, cup shape, 2.19" O.D. x .628" high with various bores and counterbores, molded, material, same as above. Plate, radius varying from 1.82" to 1.54", oval shape, with 6 lugs x .485" high, with various bores and counterbores, molded, material same as above. Spring, bellville, 4" I.D. x 15" spherical radius, material, fabric, glass, woven, type II and type III, Specification MIL-F-12298 and resin, Specification MIL-R-3745. Plate, 8.67" O.D. x 1.2" high with eccentric holes, lugs, bores and counterbores, material, plastic, polystyrene, molded, Specification MIL-M-21337. Base, 9.28" maximum O.D. x 1.69" high, formed shape with lug, bores and counterbores, material, plastic, polystyrene molded, Specification MIL-M-21347. Housing, 10" O.D. x 8.5" I.D. x 1.05" high with bores and counterbores, pad and slots, material, plastic, polystyrene, molded, Specification MIL-M-21347. All plastic molded components may be machined to meet required dimensions when molding tolerance will not meet drawing dimensions. Fuze must be tested for arming function, recovery and function of firing pin point, internal and external air pressure, and jolt and jumble. Contractor shall provide and maintain an effective quality assurance system in compliance with Specification MIL-I-45208. This mine fuze is considered very difficult to produce to applicable specifications.

05896. FUZE, MINE, AT, M607, METAL PARTS

Approx. 4" long x 2-3/4" wide, consisting of 4 assemblies and 23 components. Adapter rod extension, 1.25" long x .75" maximum diameter tapered to .50" diameter with 2 counterbores. .324" diameter & .24" diameter threaded, 5/16" - 18 UNC-2B, with stud end .24" dia. with 5/16" 18 UNC-2A thread, material, aluminum alloy rod 2017-T4. Band, "U" shape, 1.62" high x 1.14" long from .65" radius with tab extension on center line of width .50" high x .55" wide with punched hole, U opening 1.29" material, steel, CR, strip, T3, finish #3. Body, formed shape, 2.505" maximum diameter x .951" high with various diameters, bores, flange edge, etc., material, aluminum alloy die cast, alloy



FUZE, MINE, AT, M607



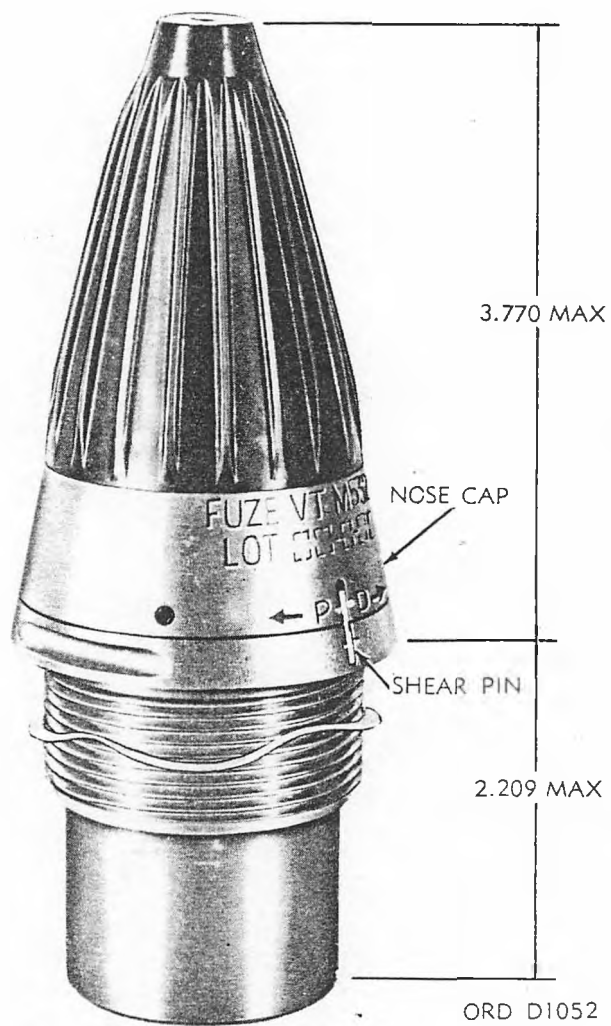


S12A, ASTM B85. Cap, 2.827" diameter x 1.26" high with 6 webs equally spaced, with various bores, dias, and threaded flange, assemblies with body, material, aluminum alloy die cast, alloy S12A, ASTM B85. Closure assembly, 3 components. Fork, cup shape, with 2 tabs formed at bottom .937" high x .188" I.D. seam at both sides of major diameter material, steel strip, CR, 1025, 1030, 1035, finish #3. Closure, cup shape, .968" diameter x .75" high with 6 tabs equally spaced on O.D., cavity, .46" deep thread - 3/4" - 12NS 2B, hole .115" drilled in base for screw, drive, round head, material, polystyrene, glass filled. Collar, flange shape, 1.26" maximum diameter x .59" high, .95" diameter, 2nd step x .396" hub diameter. Base cavity, .747" diameter x .30" deep, .28" hub I.D. x approx. .357" long material, plastic, molded, thermosetting, type CFG. Fixing Pin spring assembly, 3 components, 1 assembly: Cap, bearing, .748" O.D. x .330" high with .42" I.D. cavity .29" deep, material, polystyrene, glass filled. Spring belleville, 1.995" diameter with .438" diameter center hole .025" thick, original over-all height .155" snapping thru center to a reverse height of .145", material, fabric, glass, woven, type I and resin, phenolformaldehyde. Firing pin assembly, 3 components: Pin, firing, .375" long x .125" diameter with .110" groove near top, pin length .075" x 26 degree taper, material, steel, cold finish, C1117, 1118, 1120, 1137 or C1212, alternate steel corrosion resisting FS 303, condition C. Body, .425" I.D. x .419" long with .57" x .074" thick flange steel firing pin molded into body, material, polystyrene, glass filled for body. Pin groove, Ordnance standard. Gasket, 1.125" O.D., .620" I.D. x .065" thick material, rubber, sheet, type R, Class RS-510B, F2. Pull ring assembly, 2 components: Pin, cotter, split, Ordnance standard. Ring, pull, 1.02" I.D. 1 1/2 coils close wound, material, .094" diameter, steel wire, finish A. Rings, 2 each "O" rings, Ordnance standard. Ring, pressure, 1.453" diameter x .895" high with flange edge, 2 webs, step and angle shape with .276" center bore threaded .22" at bottom 5/16" - 18 UNC-2B, material aluminum die cast cold chamber process, alloy S-12A, ASTM B85. Ring, retainer, approved source. Rod, tilt, 1.4" long x .255" O.D. with .245" high, .0935" hole drilled thru body diameter at one end, material, steel, CR, C1010, C1015, C1018, C1020, C1117, C1118, C1120, or C1137. Rod, extension, 24.0" long x .323" O.D. with pilot point .10" long x .24" diameter followed by 5/16" - 18 UNC-2A thread, material, aluminum alloy rod, 2017-T4. Seal, .105" O.D. x .125" base thickness with 2 dome shaped diametrical cavities equally spaced from .244" center hole approx. .268" high, Stop, concave 1.28" O.D. x 1.62" high with .118" drilled cotter pin hole. A technical staff of engineers and tool designers for precision tools will be required for large production quantities normally required. This item is difficult to manufacture in accordance with specifications.

10602. FUZE, PROXIMITY, M532

The complete fuze weighs 1.3 pounds, is six inches long and the length of its intrusion is 2.21". The data package for this item consists of





FUZE, PROXIMITY, M532



classified and unclassified drawings and specifications. The maximum classification is secret. The M532 comprises a housing (body) an antenna, an oscillator, an amplifier, a battery, an arming mechanism, a booster, a PD trembler and switch to deactivate the proximity device. The visible parts of the M532 are a plastic nose cap mounted in an aluminum ring, which is attached to the aluminum fuze base, and a steel cup (extending beyond the base) which contains the S&A device and booster. The base of the fuze screws into the nose of the projectile. The deactivating switch is manually operated by turning the nose cap of the fuze. The electronic head consists of the oscillator and amplifier. The trembler switch is in the subassembly with the amplifier. The battery plugs into the base of the electronic head. The power supply (PS 201A) is a 90 cell thermal battery with a potential of 150 volts. This fuze is considered very difficult to make. Manufacturing firms will require a competent technical staff, consisting of engineers, metallurgists, technicians and tool design engineers to fabricate and maintain precision tools for production of precision parts and assemblies. The supplier of the thermal battery should be one that has had considerable experience in the manufacture of a highly reliable product.

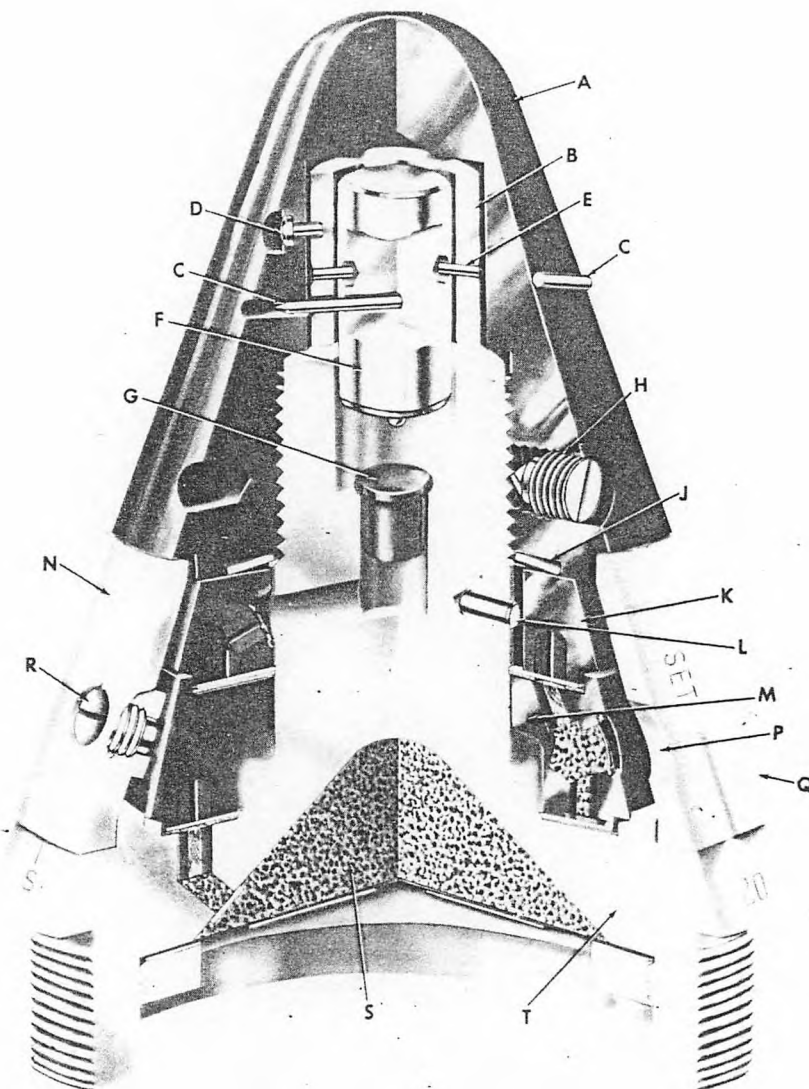
05170. FUZE, TIME, M84, METAL PARTS ASSEMBLY

Approx. 3" diameter x 2-13/16" long and consists of approx. 21 components. Body, 3" x 2.57" long with external and internal threads, counterbores and various size holes, material aluminum die cast, alloy Al3. Ring, adjustment 2.79" D x 1" long with tapered O.D. & I.D. various size holes, material aluminum die cast, alloy Al3. Ring, retainer, 2" O.D. thread x 1.60" I.D. x .20" L, material, zinc base alloy die cast. Ring, graduated time train, 2.2" D tapered to 1.98" x 1" bore x .53" long. Various counterbores, grooves and keyway. OD graduated from 0 to 25, material, brass forging. Ring, upper, time train, 1.98" O.D. tapered to 1.85" x 1" bore with keyway, various size holes, counterbores and groove, material, brass forging. Head, 2" D tapered to approx. .9" with .5" radius on nose, various holes, counterbores and internal thread, material, brass rod. Plunger, .472" diameter x .94" L with various size holes, material, steel, FS1117. Guide plunger, .645" O.D. x .477" I.D., various size holes, material, steel tubing, seamless. Liner, charge cavity, 1.93" O.D. x .695" H (hat shape) various size holes and slots, material, steel strip .0239" thick, temper 4. Disc retainer, 1.92" D x .010" thick with nine .20" diameter holes, material, steel strip, temper No. 1. Smaller components such as screws, discs, pins, washers and springs. Manufacturing firms quoting this item will require a competent technical staff. This item is considered somewhat difficult to manufacture in accordance with applicable specifications.

10469. FUZE, TIME, M65A1

Consists of 16 parts as follows Body, 1.61" long x 2.32" O.D. with molded and machined cavities, slots and threads, material, zinc, base





A—HEAD  
 B—PLUNGER GUIDE  
 C—SAFETY WIRE  
 D—POSITIONING PIN  
 E—SHEAR PIN  
 F—PLUNGER  
 G—PERCUSSION PRIMER  
 H—SETSCREW  
 J—WASHER

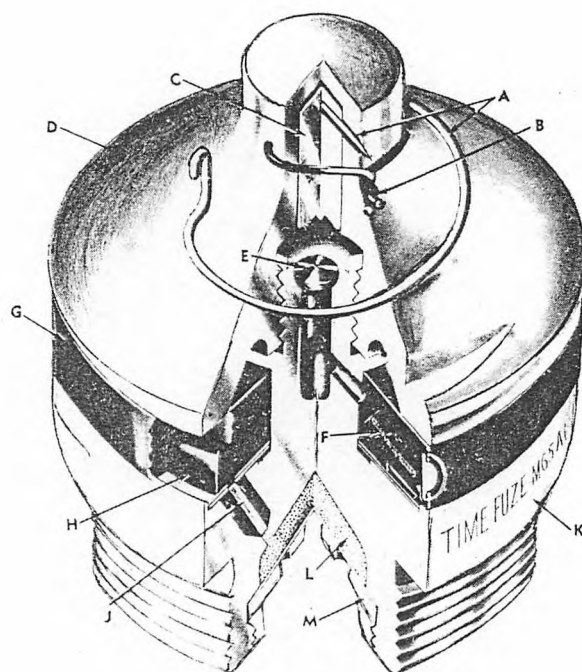
K—UPPER TIME-TRAIN RING  
 L—LOCK PIN  
 M—LOWER TIME-TRAIN RING  
 N—ADJUSTMENT RING  
 P—VENT HOLE  
 Q—RIB  
 R—LOCK SCREW  
 S—EXPELLING CHARGE  
 T—BODY ASSEMBLY

RA PD 108180A

FUZE, TIME, M84







A—WIPER ARM  
B—CONTACT  
C—SPRING  
D—DISC  
E—PLUG  
F—BLACK POWDER PELLET

G—TIMER RING  
H—TIMER RING CHARGE  
J—BODY PELLET  
K—BODY  
L—TIMER RING CHARGE  
M—RETAINER DISK

ORD 131741



alloy, die casting composition AG50A, ASTM B86. Head, 1.395" long x 2.280" O.D. with molded or machined cavities and undercuts, material, zinc, base alloy, die casting composition AG40A, ASTM B86, Ring, Time Train, 2.30" x .380" thick with forged and machined groove and 1.001" diameter center hole, material, brass, forging, free machining, Specification MIL-B-13351. Ring, expelling charge retainer, 1.686" diameter x .19" thick with 1.30" diameter center hole and 1.6875-20UNS-1A thread on outside diameter, material, steel, bar, carbon, 1117 or 12L14 (lead), cold finish, ASTM A108. Striker, .68" long x .438" diameter with machined point and two drill cross holes, material, steel, bar, carbon, 1117 or 12L14 (lead), cold finish, ASTM A108. Disc, Expelling Charge Retainer, 1.63" diameter x .016" thick with seven (7) .15" holes, material, steel, sheet, zinc coated (galvanized), ASTM A93. Cover, Expelling Charge Retainer, 1.68" diameter x .006" thick disc, material, cloth, chambric, varnished, Specification MIL-C-20610. Washer, Body, 2.18" diameter x .030" thick with .646" diameter hole, material, plastic, polyethylene sheet, type 1, grade 1. Cover Relay Charge, .31" diameter x .002" thick disc, material, paper, onionskin, Specification MIL-P-157. Pin .550" long x .150" diameter, material, steel bar, carbon 1117 or 12L14 (lead), cold finish, ASTM A108. Washer, Vent Crimping Support, .218" O.D. x .016" thick with .150" center hole, material, brass strip alloy 6 or 8, half hard, ASTM B36. Disc vent closing, .218" diameter x .003" thick, material, plastic polyethylene sheet, type 1, grade 1, Specification L-P-378. Cover, Groove, 2.20" diameter x .002" thick with 1.10" hole, material, paper, onionskin, Specification MIL-P-157. Wire, Shear, 2.70" long x .032 diameter, material, wire copper, soft or annealed, AST, B3.

09929. FUZE & FIRING PIN ASSEMBLY

Approximately .75" diameter x 1-3/4" long, procured loaded with lead cup and stab detonator consisting of escapement and gear assembly, wire clip, rotor, housing, gasket, retainer "O" ring, firing pin, thumb screw and wire, safety, wire safety stainless steel strip 301 or 302. Thumb screw steel cold rolled C1018 to 1025 or C1117 to 1141 or A1 alloy 2011-T3 or 2011. Firing Pin 303 stainless steel. Retainer, Aluminum alloy 2011 or 2024. Gasket synthetic rubber sheet. Housing Aluminum alloy 2011 or 2024. Rotor aluminum alloy A380 die casting. This item is considered somewhat difficult to produce in accordance with applicable specifications.

10596. FERRULE-ARMING WIRE

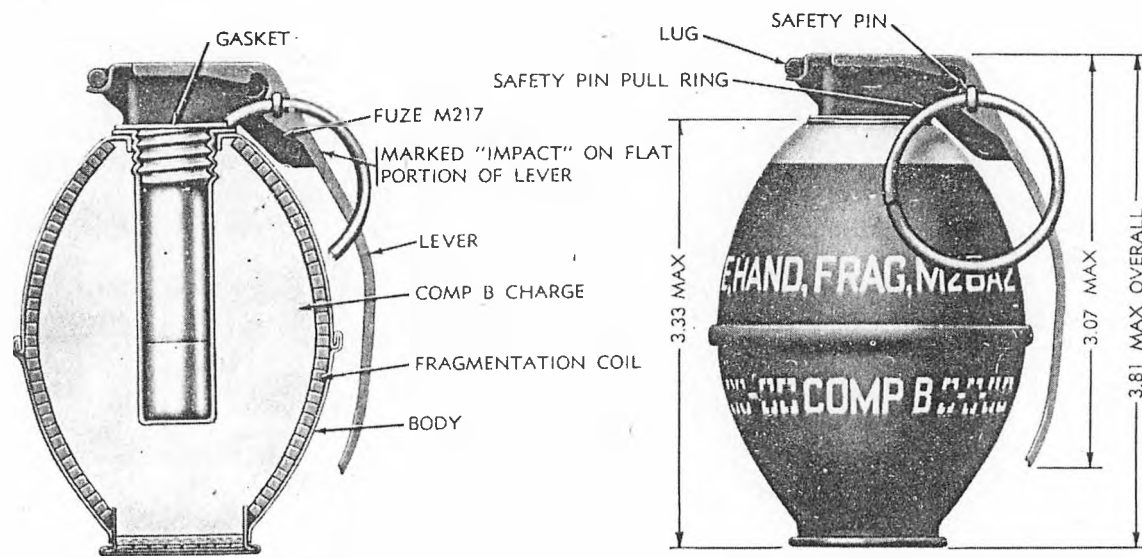
Is made of (7) complete and (2) half turns of .063" D wire to form an oval shape which is .50" in length. The turns of wire are wound tightly adjacent to each other like a coil spring. Material is wire, steel, Carbon, hot rolled, 1020 Min ASTM A510.

10035. GALVANOMETER

For testing blasting circuits. This is essentially a series type ohmmeter consisting of a milliammeter in series with a suitable battery and resistance. It shall be ruggedized, portable instrument, capable of producing full scale deflection from a current load of not more than 8 milliamperes. Position influence shall not exceed 1% of reading in normal position. Range of zero (0) adjustment minimum adjustment of 3% of full scale length shall be provided. Size: height 4 1/4" maximum, width 3 1/4" maximum, depth 1-7/8" maximum weight 1 lb. maximum without battery or carrying case. Specifications standards are required for storage temperatures, operating temperatures, humidity conditions, vibration, shock, dielectric strength. The meter case shall be a durable rectangular case made of metal, phenolic composition, or other suitable plastic material. Plastics with a cellulose nitrate base are not acceptable, shall have 2 compartments, indicator and battery. Meter carrying case, the galvanometer shall be inclosed in a durable carrying case not less than 5/64" thick with carrying strap 5/64" thick, 1/2" wide, 4' long with adjusting buckle. Power requirement - galvanometer must operate from a silver chloride battery MIL type BA-275-245 per Spec. MIL-B-13136. NOTE: Battery shall not be supplied with galvanometer. Detailed data for this item is contained in Federal Specification W-B-411a. This item is not considered difficult to manufacture by firms manufacturing electrical instruments of this type, however, the specification is very definitive as to detailed requirement for this instrument.

10612. GRENADE, HAND, FRAGMENTATION, M26A1 or M26A2, METAL PARTS

3.33" high x .236" O.D., consisting of seven components, upper body 1.62" high, 2.24" I.D. .012" thick. well formed at one end .68" diameter x .135" deep, lock seam formed at other end 360 degrees. Material: steel, strip, cold rolled, temp 5 finish No. 1, specification ASTM-109. Body lower 1.44" high x 2.24" I.D. .012" thick hole formed at one end. .995" diameter for closing cap, lock seam at other end formed 360 degrees, material: steel, strip, cold rolled, temp 5 finish No. 1, specification ASTM A109, Coil spiral 2.78" high x 2.22" O.D. spiral wrapped interior surface of coil to be notched, material wire, hard drawn 1010 finish No. 1 QQ-W-461 alternate material-carbon steel, cold finished 1010, to special tensile 90,000 PSI minimum ASTM A108, hardness after forming-Rockwell B84-98. Well - (For M26A1 - 2.94" long x .300" diameter with .95" flange on open end and .5625-12 Special rolled thread. Well - (For M26A2) - 2.22" long x .525" diameter with .95" flange on open end and 5/8-11 special rolled thread, material, brass strip alloy No. 1, .035MM annealed grain size ASTM B36. Cap closing .08" high x 1.145" diameter, .012" thick cup formed .08" high material: steel, strip, cold rolled, temp 5, finish No. 1, ASTM A109, Disc Base is .93" diameter x .0747" high, corrugated, material-steel strip, cold rolled, temp 5 finish No. 1 specification ASTM A109. Disc base assembled into Cap



ORD D1342

GRENADE, HAND, FRAGMENTATION, M26A1 or M26A2, MPTS



Closing by brazing or welding brazing filler metal, BAg-1a or BAg-1 ASTM B260 brazing Q-F-499. Ring Retaining Lower .32 inches diameter 102 inch thick flanged .15 inches, 360 degrees. Material: steel, strip, cold rolled temp 5 finish No. 1, specification ASTM A109. Coil spiral assembled into upper and lower body. Double lock seams to be formed 360 degrees to withstand an internal air pressure of 15 PSI for 10 seconds. Well assembly secured to grenade by soldering, metal, alloy 50A or B, tin alloy ASTM B32 and soldering paste flux, specification Q-F-506. Closing Cap assembly to bottom of grenade by soldering. Manufacturing firms bidding on this item must have a qualified engineering staff and tool designers to fabricate this item to applicable government specifications. Item is not considered difficult to fabricate and assemble.

10570. GRENADE, RIFLE, PRACTICE, M29

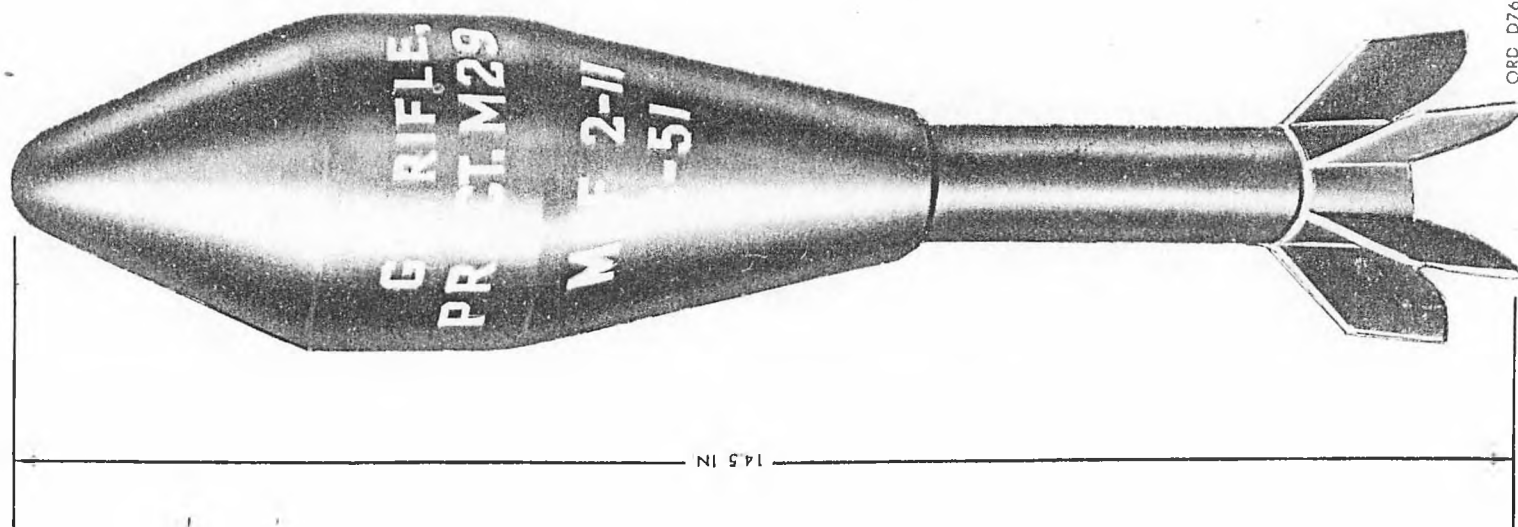
7 components. Body, 5-9/16" long x 3" O.D., rear end tapered to 1-7/16" I.D., wall thickness, 1/2" to 5/32", material, aluminum alloy die cast. Ogive. cone shape, 3.161" long, 2.768" base I.D. x 5/64" wall thickness material, steel sheet, HR or CR, commercial. Fin, 1-27/32" long x 3" diameter, 6 fins, 63/64" bore, material, aluminum alloy die cast. Ring, 2 each, 29/32" I.D. x 31/64" wire diameter, material, music wire, ASTM A228. Tube, 5-5/16" long x 1-1/16" O.D. x 55/64" I.D., material, aluminum alloy tubing. Pressure test Internal Hydrostatic 4500 PSI on tube. Each item packed in an ammunition fiber container. Manufacturing firm bidding this item should have a technical staff consisting of engineers, technicians and tool design engineered to design and maintain precision tools to produce this grenade in quantities normally required. This item is considered somewhat difficult to produce in accordance with specifications.

10094. GROMMET ASSY F/155MM & 8" SHELL, F/175MM PROJ. METAL FIBRE

Used to protect the copper rotating band. Consists of 6 components. Grommet assembly for 155MM is approx. 6 1/2" diameter x 2-3/4" wide, hoop shaped and assembled to the shell with tie wires. The housing liner is fabricated from steel, sheet or strip .025" thick by stamping and roll forming. The fiber molded liner (1/8" thick) is approx. 1-3/4" wide to fit inside the housing liner and secured with steel staples. The steel tie wire is 1/16" diameter x 8" long for use when grommet is assembled to the shell. The steel parts require phosphating and painting. The complete assembly must withstand a flat blow test, edge blow test. The fiber liner requires a water immersion test for moisture absorption. The 8" grommet assembly is the same as 155MM except that it is approximately 8-1/2" diameter x 2-3/4" wide. All components are fabricated in the same manner with the same types of material. They are not difficult to produce.







ORC D768

GRENADE, RIFLE, PRACTICE. M29



10582. GROMMET, ASSEMBLY, PLASTIC

Type I, for Projectile, Chemical, 155mm, M121A1. Grommet, Plastic Filament wound, 6.67" O.D. x 6.095" I.D. x 1.55" W, two each aluminum inserts 1.5" L x .625" thick x .75" W with .187" step each end wound on the outside of Grommet 70 degrees apart for use as handles for assembly and disassembly of Grommet to Projectile. Insert material, aluminum alloy extruded shape 6063-0, Spec ASTM-B-221. Grommet has 55 and 30 degree intersecting angles cut through one side between inserts. The roving shall be continuous with 60 end fiber glass with compatible polyester finish that meet all requirements of Spec. MIL-G-46905. Grommet assembly must withstand various tests such as Barcol hardness, specific gravity and water absorption test. This item is not considered difficult to produce by firms manufacturing this type product.

05540. HEAD ASSEMBLY FOR M525 and M527 FUZES

Mechanical escapement type, with arming, non-arming, arming delay, and clock movement principles. Approx. 1-1/2" L x 1.38" O.D., approx. (43) components, (11) assemblies, (29) spec. components - Balance .305" O.D. x .15" thick, material brass rod, Bushing, .45" O.D. x .212" W. material, brass rod, Firing Pin 1.4" L x .157" O.D. Material, aluminum alloy rod, Bushing Retainer, .38" L x .24" O.D. with .36" flange, material, brass rod, Spring Washer, approved source, Housing, .998" O.D. x .625" L, material, brass rod, Plunger, .25" O.D. x .26" L material, Aluminum alloy rod, Striker, cup shape, .895" O.D. x .475" H with .055" wall, material, aluminum alloy rod, Head, 1.38" max O.D. x 1.097" max L, material, aluminum alloy tubing or rod, Spacer 1.04" O.D. x .0937" thick, material, aluminum alloy sheet, Detent .21" O.D. x .25" L, material, brass rod, Pinion (3) material stainless steel, Pins and Post, (6) material, stainless steel, Plate, .61" O.D. x .031" thick, material, stainless steel, Plate, .91" O.D. x .048" thick material brass sheet, Gears, (3) 19, 22, 40 tooth & Escape Wheel, 9 tooth, material, brass for gears and wheel, Shaft, .545" L x .078" O.D. material, stainless steel Bushing, .39" L x .37" O.D. material, brass rod, Retainer, for main-spring, cupshape, .91" O.D. flange, .61" O.D. cup x .275" W, material, stainless steel, Spring, Main 13.5" developed L x .0095" thick x .158" W, material Elgiloy, approved source, Springs (4) for release, set back detent, plunger, lockpin balance, material, wire, steel, music, Springs, plated, embrittlement seasoned, and load tested, Miscellaneous Parts, pull wire (3) clips and card, packaged with polystyrene pads. Manufacturing firms bidding on this item will require a highly competent technical staff of engineers, metallurgists, tool design engineers to design and maintain precision tools to produce precision components. This item is considered extremely difficult to manufacture to applicable drawings and specifications.

06629. HOLDER, INCREMENT, PROPELLANT M1A2, M2A1 and M3

M1A1, (2) components, Clip, 2 ea. "U" shape, developed L, 3.5" x .028" D, No. 22 B.W. Gage, material, wire, music, steel, WD1085W, Spec. QQ-W-470, Collar, .94" I.D. x .17" W x .037" thick, developed L 3.3", material, steel, WD1010 or WD1020, CR, Spec. MIL-S-11713, Clips inserted in slots on collar and crimped in place, finish, oxide black, Spec MIL-C-13924. M2A1, (2) components, Clip, 3 ea., "U" shape, developed L 4.25" x .035" D, No. 20 B. W. Gage, material, wire, music, steel, WD1085W, Spec. QQ-W-470, Collar, 1.23" I.D. x .26" W x .047" thick, developed L 4.25", material, steel, WD1010 or WD1020, CR, Spec. MIL-S-11713, clips inserted in slot on collar and crimped in place, finish, oxide black, Spec. MIL-C-13924. M3, (2) components, Clip, 4 ea., "W" shape, with curved ends, material, wire, music, steel, .035" dia., No. 20 B. W. Gage, Spec. QQ-W-470,

Collar, 1.23" I.D. x .26" W x .047" thick, material, steel, sheet, or strip, 1009 thru 1020, Spec. QQ-S-698. Clips inserted in slot on collar and crimped in place, finish oxide black, Spec. MIL-C-13924. These items are not considered difficult to manufacture to the applicable specifications.

11270 HEAD ASSEMBLY, M29A2, PRACTICE F/3.5" ROCKET MPTS

10.58" L x 3.447" OD, consists of two components, body 6.25" L x 3.447" D at large end, aft end tapered to 2.03" OD. Exterior on opened end machined to accept ogive, aft end threaded internally for fuze. Varying wall thickness. Material: iron, gray casting, Class 20. Ogive 4.62" L x 3.452" D at open end, cone shaped. Material: steel, strip, FS1009, temper No. 5 finish No. 1. Ogive to be crimped to body 360 degrees. Firms bidding this item will require a competent staff of engineers, chemists, metallurgists, and tool designers to produce in accordance with ordnance specifications. This item is not considered difficult to manufacture.

11269. HEAD ASSEMBLY, M28A2, HE, AT, 3.5" MPTS

10.52" L x 3.447" OD, consists of four components, body 6.22" L x 3.447" OD at one end and tapered to 1.733" at other end, wall thickness .063". OD at large end machined, .335" to a depth of .038" to receive ogive. Material: steel tubing, as hot rolled, FS1000, seamless, mechanical. Ogive, 4.62" L x 3.452" OD at one end, tapered cone shape, wall thickness .041". Interior at large end, machined to a depth of .42". Material: steel, strip, FS1009, temper No. 5, finish No. 1. Cone 3.668" L x 3.359" at large end, wall thickness .065" cone shaped, closed at small end. Material: copper, sheet, cold rolled, deep-drawing-annealed. Union flanged end 2" D, .67" thick, exterior grooved 360 degrees with internal threads. Material: steel, bar, FS1117, as cold finished. Union to be shrunk and brazed to body. Cone to be assembled to body and ogive brazed to body. Firms bidding this item will require a highly competent staff of engineers, chemists, metallurgists, and tool designers to produce in accordance with required ordnance specifications. This item is not considered difficult to produce.

10355. IGNITER, EM-6, METAL PARTS

Metal Parts consists of 8 parts. Four minor parts are carbon steel, ASTM A109, one cover is polyethylene, Type I, Class L, Grade 2, Spec. L-P-390, one disc insulation, synthetic resin, Type G, Form F, Spec. MIL-I-631 and two major components, tube and head. The tube 7.32" long with .965" diameter, open at one end, is fabricated from steel, alloy, Type 4340, 4130, or 4140 Specs. ASTM A331 or A322 and is heat treated to 135,000 minimum yield. Tube and tab assembly after welding is subject to 100 per cent inspection by continuous wet fluorescent process of MIL-I-6868. The head, 1.66" long x .965" maximum diameter, contain three external threads, four external machined surfaces. The inside diameter varies in steps from 0.54" to 0.08" and contains one internal thread. The head is fabricated from steel, alloy, Type 4340, 4130, or 4140 Specs. ASTM A331 or A322 and is heat treated to 165,000 minimum yield. All the metal parts require nickel plate protective finish No. 1.4.3.1 of MIL-STD-171. The applicable specification for Igniter, EM-5, Metal Parts is Purchase Description MIS-14725 dated 10 December 1964. This item is considered somewhat difficult to manufacture.

06555. LAUNCHER, ROCKET, 66MM, M72

The launcher is 34 3/4" long maximum x approx. 4" diameter and consists of approx. 170 components. Inner tube assembly consists of tube inner approx. 14" long x 2.645" to 2.784" O.D. at rear end of tube, by approx. .050" wall thickness. Material: aluminum alloy, extruded shape, 6061-T6 Spec. ASTM B221. Firing Pin Housing Assembly is mounted on tube inner, approx. 4" long x .76" diameter at forward end and 1.14" diameter at rear end. Material: aluminum, die casting, Composition 11, Spec. QQ-A-591 and is composed of 4 - screw, cover, sight, rear, washer pin firing, firing pin assembly, ring retaining, housing pin firing, cover sight rear, spring firing pin Bail handle assembly, "O" ring. Outer tube assembly is composed of tube outer approx. 24" long x 2.667" diameter, approx. .052" wall thickness, material: filament wound epoxy tubing, components assembled to tube outer, trigger assembly; strap housing trigger, cover rear, "O" ring, front sight assembly, retainer assembly, housing lever detent, strap housing, trigger back, pulley assembly, recocking latch assembly, idler stop assembly, pulley housing assembly left hand, pulley housing assembly right hand, trigger safety assembly, pull pin assembly, rear cover firing pin housing, rear sight assembly, safety pin assembly, slide, adjusting temperature, sling assembly. All component parts must be produced to close tolerance. Manufacturing firms bidding on this launcher assembly will require a technical staff consisting of engineer, metallurgist and tool engineers to design, fabricate, and maintain precision tools for mass production of precision parts. This assembly is extremely difficult to manufacture and assemble to applicable specifications.

10177. LINK CARTRIDGE, METALLIC BELT 40MM M16

This link consists of two pieces: Loop and coupling and are not assembled together for delivery. Coupling cartridge link is manufactured from C1010 to C1020 steel Fed. Spec. OU-S-633. It can be made by cold heading or in two pieces and welded together. Coupling is approx. 0.49" x 0.44", collar button shape, and has various grooves machined in it. Loop cartridge link is manufactured from 1050, 1050 Mod. Steel, Fed. Spec. QQ-S-777, cold rolled annealed. Material is 0.035" thick x approx. 0.50" wide. It is formed into a six sided loop approx. 1.62" in diameter. Loop has various slots, cut outs, indentions in it. It can be made in one piece with one weld or in two pieces with two welds. Both link and coupling require heat treatment and final protective finish in accordance with paragraph 5.3.1.2 of MIL-STD-171. Link coupling are considered difficult to manufacture to the dimensional tolerances.

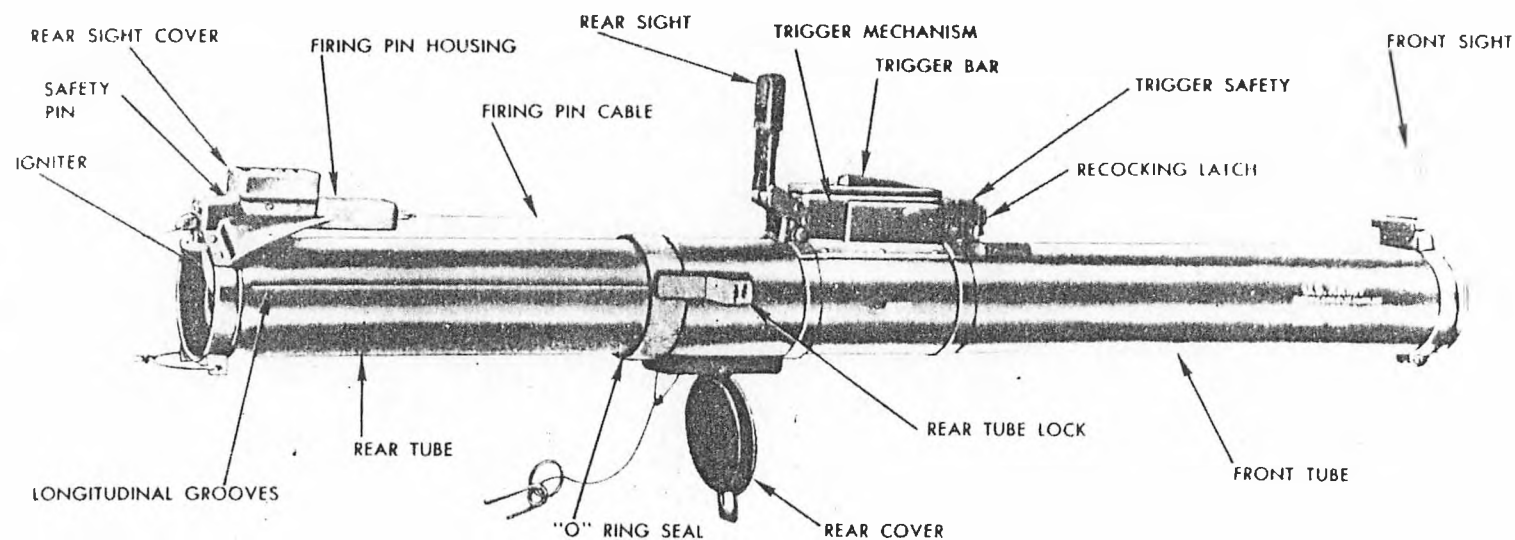
10660. LUG, BOMB, SUSPENSION, MAU-67/A

Eyebolt design, 2.42" L, 1-3/4" - 12 UN-3A full thread at base, approximate thread length, .875", thread relief at top and chamfered at base, eyebolt hole broached 1" L x .72" W. 125 finish





# UNITED STATES ARMY MUNITIONS COMMAND



61a

LAUNCHER, ROCKET, 66MM, M72

PICATINNY ARSENAL



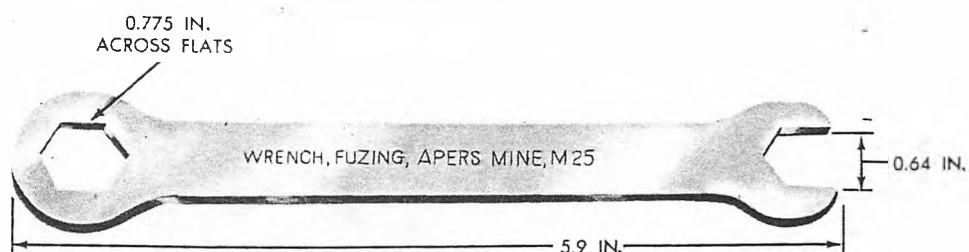
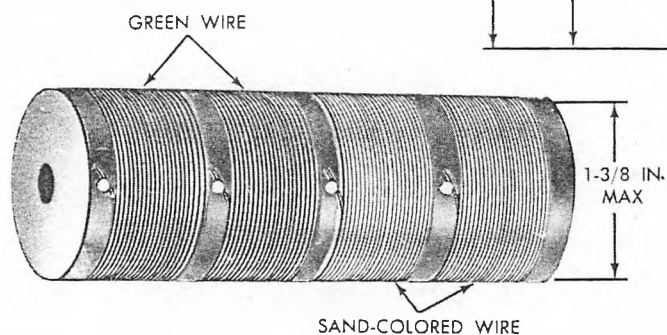
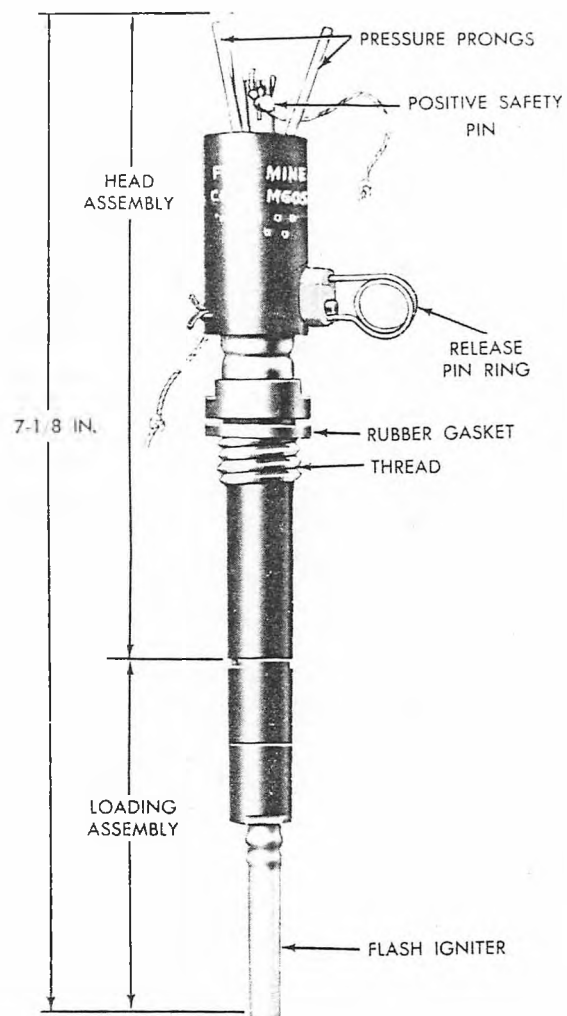
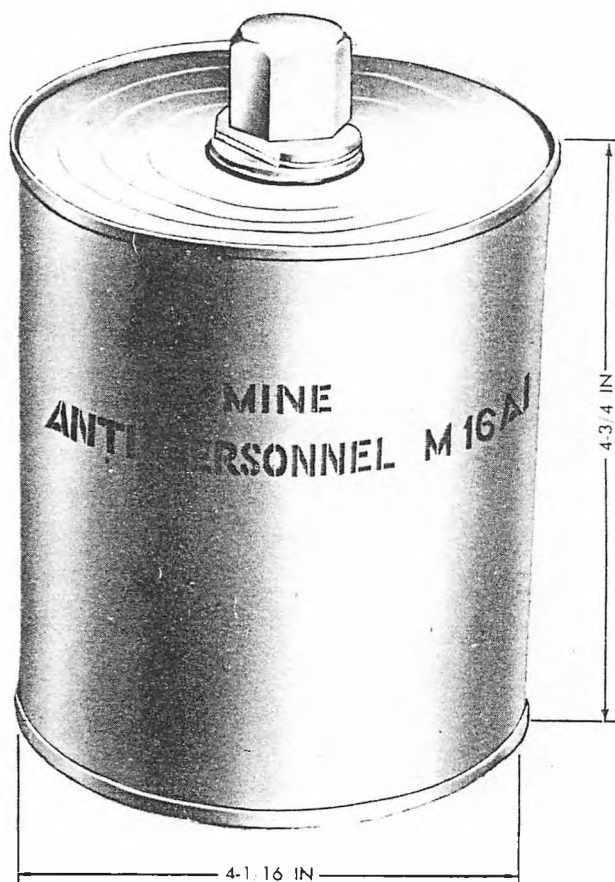
required on top of broached hole must be maintained. Material, 4340 CR-NI-MO steel Bar, Specification MIL-S-5000, zinc plating, Specification QQ-Z-325, Class 2, Type II, or Cadmium plating, Specification QQ-P-416, Type II, Class 2. Testing is severe, material free from seams, laps, etc., and inspected by Eddy Current Method or equivalent, each sample shall withstand a load of 27,000 pounds in direction/W/ with all permanent deformation and a load of 35,000 pounds in the same direction without rupture. Each sample shall withstand a load in direction /X/ of 18,000 pounds without permanent deformation and a load of 24,000 pounds in the same direction without rupture. Each sample shall withstand a .10 deflection measured at the center of the crossbar in direction /Y/ without rupture. Each sample notched as required shall accept on impact load of 200 foot pounds applied in direction /Z/ without failure, Test loads to be applied on a simulating bomb rack hook fixture, each lug must be magnetic particle inspected in accordance with Specification MIL-I-6868, MIL-STD-105 shall apply to sample, no defects allowed. This item is considered extremely difficult to manufacture.

06679. MINE, AP, M16A1, METAL PARTS

Complete assembly is approximately 4" diameter x 3-1/8" long and consists of approx. 17 components. Body, 3.85" diameter x 3.89" long and 3.275" I.D., 3.35" deep with counterbores and threads, material, gray iron casting. Well, detonator, cup shape approx. 1" diameter x 2.4" long with short threads on outside and inside, material, zinc base alloy, die cast or Polystyrene plastic. Plug top, 3.47" diameter x .40" thick with hub 1" thick x 1-3/8" diameter with 13/16" threaded hole, material, gray iron casting. Pipe, flash approx. 1" diameter x 3.5" long and .532" I.D. with short threads on each end, material, zinc base alloy, die casting or 1/2" standard steel pipe commercial. Container assembly, 4.045" diameter x 4.74" long, fabricated from .014" thick steel by seaming, soldering and crimping. Other miscellaneous components consist of gaskets, copper strips, cup, detonator, aluminum sheet .015" thick. Plug, shipping, zinc base alloy, die casting or Polystyrene plastic. Disc, flash, gilding metal .003" thick. Washer, lead sheet .062" thick. Plug, filler hole, steel 1009 to 1020 .059" thick. Gasket, rubber .078" thick. Bushing, aluminum alloy rod 1.125" diameter Holder, delay, zinc die casting or aluminum rod .922" diameter housing delay, zinc base alloy, die casting or aluminum alloy rod 1/2" diameter and washer, delay. Same material as holder delay. Various components require phosphating, painting, plating, to meet various salt spray requirements. Manufacturing firms bidding this item will require a competent staff of engineers, metallurgists and tool engineers to design and maintain precision tools. This item is considered somewhat difficult to produce in accordance with specifications.

06675. MINE, AP, M14E1, NON-METALLIC, WITH INTEGRAL FUZE

Approx. 2.21" diameter x 1 5/8" long, and consists of approx. 18 component parts. Clip Safety, 2" diameter x .059" thick, horseshoe shape with (1) .15" diameter hole, material, Steel ASTM-109 cold rolled temper No. 2 fabricated by stamping followed by Zinc or Cadmium Plating to withstand a 24-hour Slat Spray Test. Ring Lock, .76" diameter x .425" thick with slots and lugs, material, molded plastic. Key Lock, body section .23" diameter x .25" long with (3) integral lugs .26" radius x 30 degrees wide x .105" thick material Molded plastic. Plate pressure, 1.9" diameter, maximum, x .53" thick with various lugs, slots, and counterbores, material, Molded Plastic. Body Fuze, 2.2" diameter x 1.05" long with various shaped lugs, angles, material, Molded Plastic. Spider, 2" diameter x .217" thick with various shaped slots, lugs, and angles, material, Molded Plastic. Spring Belleville, 1.996" diameter x .025" thick with 10 degree concave shape and a .438" diameter hole through the center, material, Phenolic Glass Fabric Laminant. Cup, Detonator Holder, .29" diameter x .42" long x .024" wall thickness, cup shaped, with .15" diameter hole through bottom, material, Molded Plastic. Base, Detonator Holder, .76" across Hex shape



MINE, AP, M16A1, MPTS

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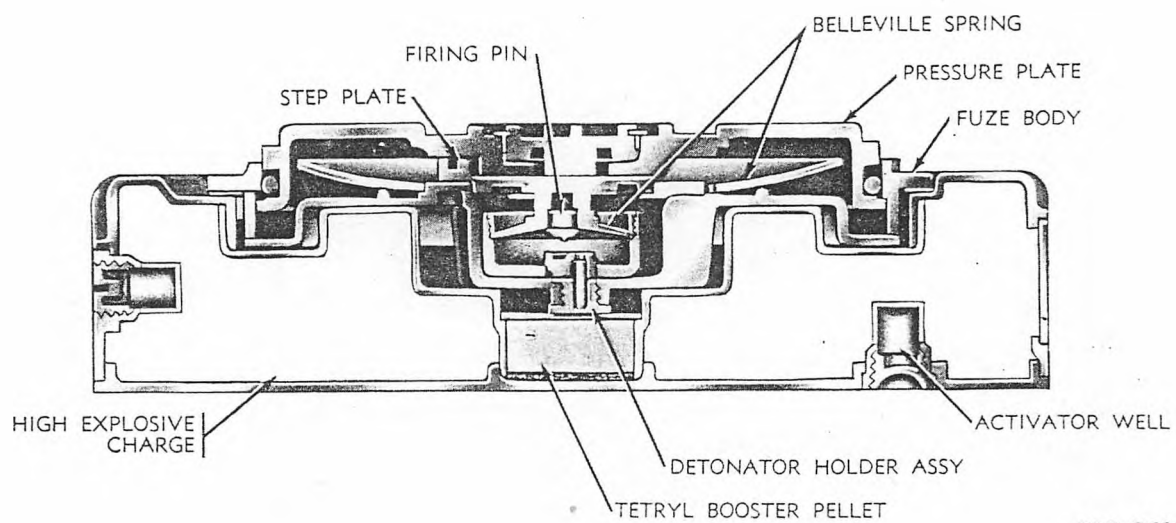
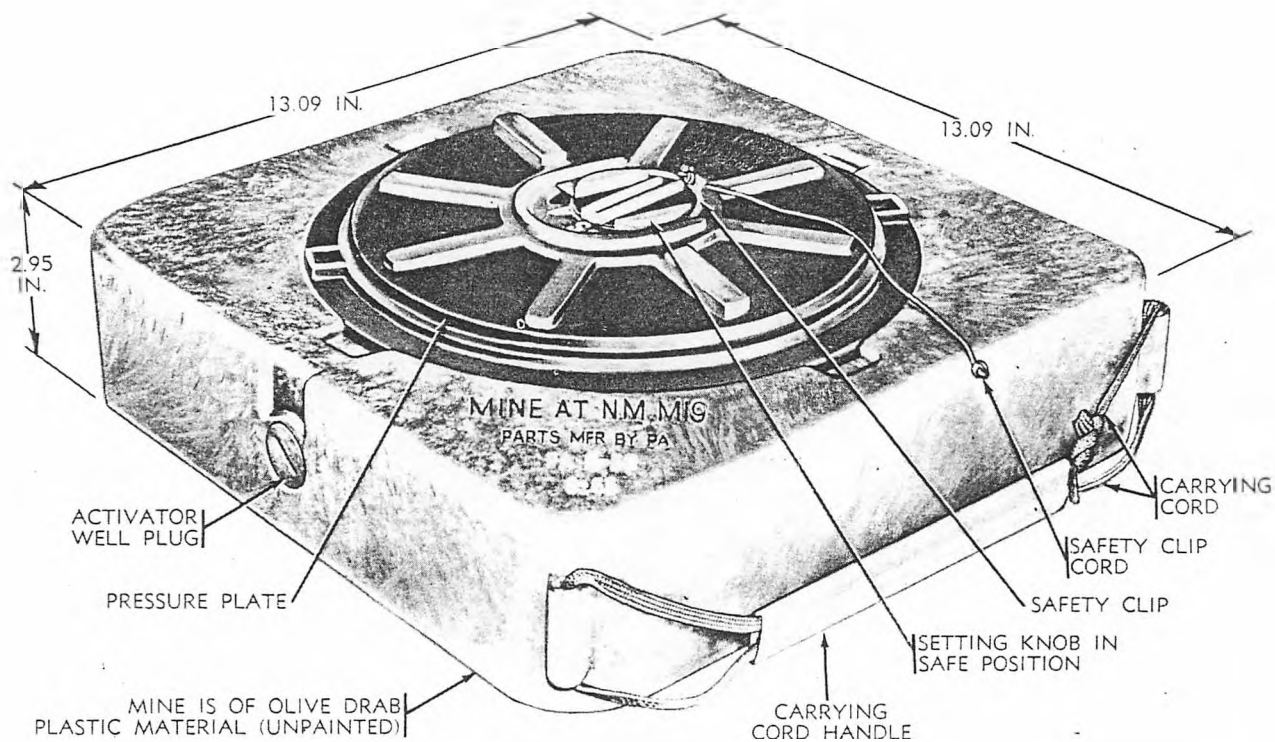
flange, .06" thick. The body section 7/16" diameter with (20) threads per inch, 1.09" length, material, Molded Plastic. Gasket, Detonator Holder, .76" diameter x .58" I.D. x .05" thick material, Rubber Spec. MIL-R-3065, Grade RS-605. Partition, 2.07: diameter x .047" thick, 15 degree concave shape with .17" diameter hole through center, material, Molded Plastic. Body Firing Pin, body section .42" diameter x approx. .25" length with a .135" thick flange .57" diameter with .12" radius and (3) grooves equally spaced .09" wide x approx. .15" deep, material, Molded Plastic. Pin Firing, .28" long x .109" diameter, pointed on one end with a groove on the opposite end, material, Steel Corrosion resistant Condition A, 303, Spec. MIL-W-52263. Note, the body is molded around the firing pin to complete the Assembly. Plug Shipping, (3) step shape .76" flange diameter x .05" thick, the threaded section 7/16" diameter, (20) threads per inch by 1/8" long, the second section .29" diameter x 3/8" long, the third section .15" diameter x .23" long with a .06" diameter hole .11" deep in end, material Molded Plastic. Cord, Safety Clip, commercial, 9" long. Cord, Carrying, parachute cord, Type B, Class A, Spec. PA-PD-460, 26" long. Gasket, rubber, Class B, "O" Ring, government standard. Body, Mine, 2.21" diameter x .77" long, with various shaped lugs, angles, inside diameters, material Molded Plastic. All Molded Plastic components, material Spec. L-P-398, type II, Class 2. The complete assembly must withstand Jumble, Jolt Air Test function, Arming torque tests in accordance with applicable specifications. This item is considered difficult to produce to meet applicable specifications.

10560. MINE, AT, M19, NON-METALLIC, PLASTIC PARTS

Approx. 13" long x 13" wide x 2.93" high, 8 components. Base, Approx. 13" long x 13" wide x .39" high, material, plastic, polystyrene molded, type I, Spec. MIL-M-21347. Body, approx. 12-3/4" long x 12-3/4" wide x 2.8" high, material, plastic, polystyrene, molded, type I, Spec. MIL-M-21347. Cord, Carrying, parachute, 36" long, type B, Class B Spec. PA-PD-460. Cover, booster well, 2" diameter x .03" thick, material, plastic, polystyrene, molded, type I, Spec. MIL-M-21347. Cover, filling hole, 1.75" diameter x .1" thick, material, plastic, polystyrene, molded Type I, Spec. MIL-M-21347. Handle, carrying cord, oval shape, 6" long x .3" wide x .12" diameter, material, plastic, polyethylene, molded, type I, Grade I Spec. L-P-390. Well, activator, 2 each, cup shape, .998" maximum O.D. x 1" long x .045" wall thickness at base, material, plastic, polystyrene, molded, Type I, Spec. MIL-M-21347. Well, fuze, eccentric dias., 9.49" maximum O.D., 2.42" over-all height, wall thickness .094" basic, material, plastic, polystyrene, molded, type I, Spec. MIL-M-21347. Mine assembly shall withstand an internal air pressure of 2 lbs., minimum per square inch gage for 10 seconds. Contractor shall provide and maintain an effective quality assurance system in compliance with Spec. MIL-I-45208. This mine is considered difficult to produce to applicable specifications.







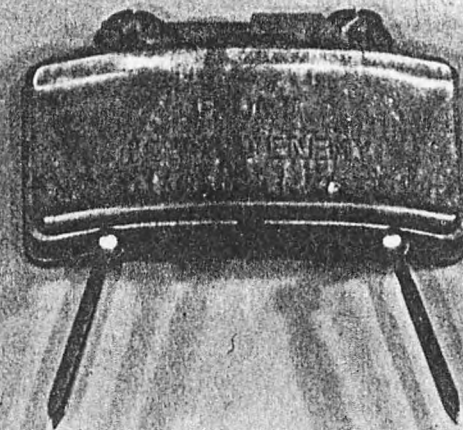
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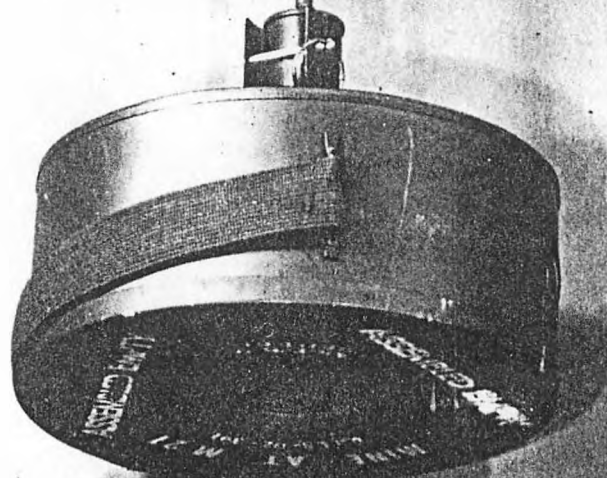
06692. MINE, AT, M21, METAL PARTS, ASSEMBLY

Approx. 9" diameter x 5" high and consists of approx. 30 component parts as follows: Body, Cup shaped 8-7/8" diameter x .365" high. The bottom is convex shape 3/16" thick, sidewall thickness .07" material, steel strip, 1007 hot or cold rolled, annealed. Base, 8-7/8" diameter with .53 flange, hub diameter 1-5/8" x .35" high flange, material, steel sheet, 1007, .047" thick, hot or cold rolled, annealed. Sleeve, "hat shape" 3.425" flange diameter x 2.73" diameter x .54 deep with 1.75" hole in center, material, steel sheet, 1007, cold rolled, annealed .0239" thick. Adapter, Cap, 3.439" diameter x .532" long with 3" 20 thread I.D., material, steel tubing FS1000 or FS1020, type I, Spec QQ-T-830. Cover, "hat shape", 9.25 flange diameter x 3.437 diameter x 7/16" deep with 2-3/4" hole in center, material, steel sheet 1007, cold roll and annealed .024" thick. Cap, closing, 1.715" diameter x .27" long formed with flange and convex bottom, material, steel strip, 1007, hot or cold rolled, Temper No. 4, .018" thick. Tube, Delay, flange diameter 1-11/16" x .34" thick, body diameter 1.11" x 1.155" long x .648" bore with various counterbores and thread, material steel bar, 1117, Spec. ASTM A108. Holder, Delay, .75" diameter 16 thread x .32" long, body diameter .626" x 1.05" long with various size counterbores, material, aluminum alloy rod, 2017-T4 or 2011-T3, ASTM B211. Pin, Firing, .503" diameter x .425" long, material, Aluminum alloy, bar, 2024-T4, ASTM B221 or B211. Plug, Closing, 1-3/8" diameter 18 thread x .225" long with .225" wide x .05" deep slot one side, material, steel bar 1010 to 1020, 1117, Spec. ASTM A108. Plug, shipping, 1-1/8" Hex with 3/4" 12 thread overall length .425", material, Plastic polystyrene, glass filled or Aluminum alloy, bar, 2011-T3, ASTM B211 or Aluminum alloy, Die Casting Comp. 10 or 11, QQ-A-591 or Zinc base alloy, Die casting ASTM B86. Holder Primer, .53" diameter x .27" long with center hole and counterbore, material, Aluminum alloy, rod, 2017-T4, ASTM B211. Cap, Charge, 3" diameter 20 thread x .56" long with hub and flange one side 3/4" 12 thread through center, material, Aluminum alloy GS20A, ASTM B209-56T. Cup, 2.61" diameter x 1.225" long with .06" wall thickness, material, Plastic polyethylene, type I, grade I. Lid, 2.61" diameter x .22" high, .06 wall thickness, material, Plastic polyethylene, Type I, Grade I. Handle, 39" long x 1.25" wide x .062" thick, material, webbing, cotton, type IIA. Slide, Handle, .823" long x 1-5/8" wide x .109" thick with two slots, material, Iron malleable casting, Spec. ASTM A47 or steel strip ASTM A109. Gasket, closing plug, 1.28" diameter x .035" thick, material, rubber. Washer, Firing Pin, .745" diameter x .010" thick x .127" hole in center, material, Aluminum alloy, 5050-H39. Cup, Relay .24" diameter x .633" long, .027" wall thickness, material, Aluminum alloy sheet, 110-0 or 3003-0, ASTM B209. Washer, .388" diameter x .0319" thick with .126" hole in center, material, Aluminum alloy, sheet ASTM B209. Clip Handle, "U" shape 1.26" long x .91" wide with .58" legs, material, steel strip, Temper No. 4, ASTM A109. Casket, shipping Plug, 1.13" diameter x .035" thick with .74" hole in center, material, steel wire FS1010. The complete assembly is fabricated by copper or silver





CLAYMORE MINE



M21 MINE AT



BOUNDING  
MINE

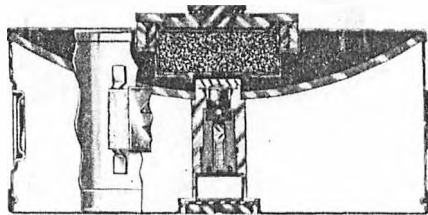


GRENADE  
M18 SMOKE

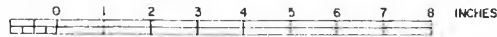


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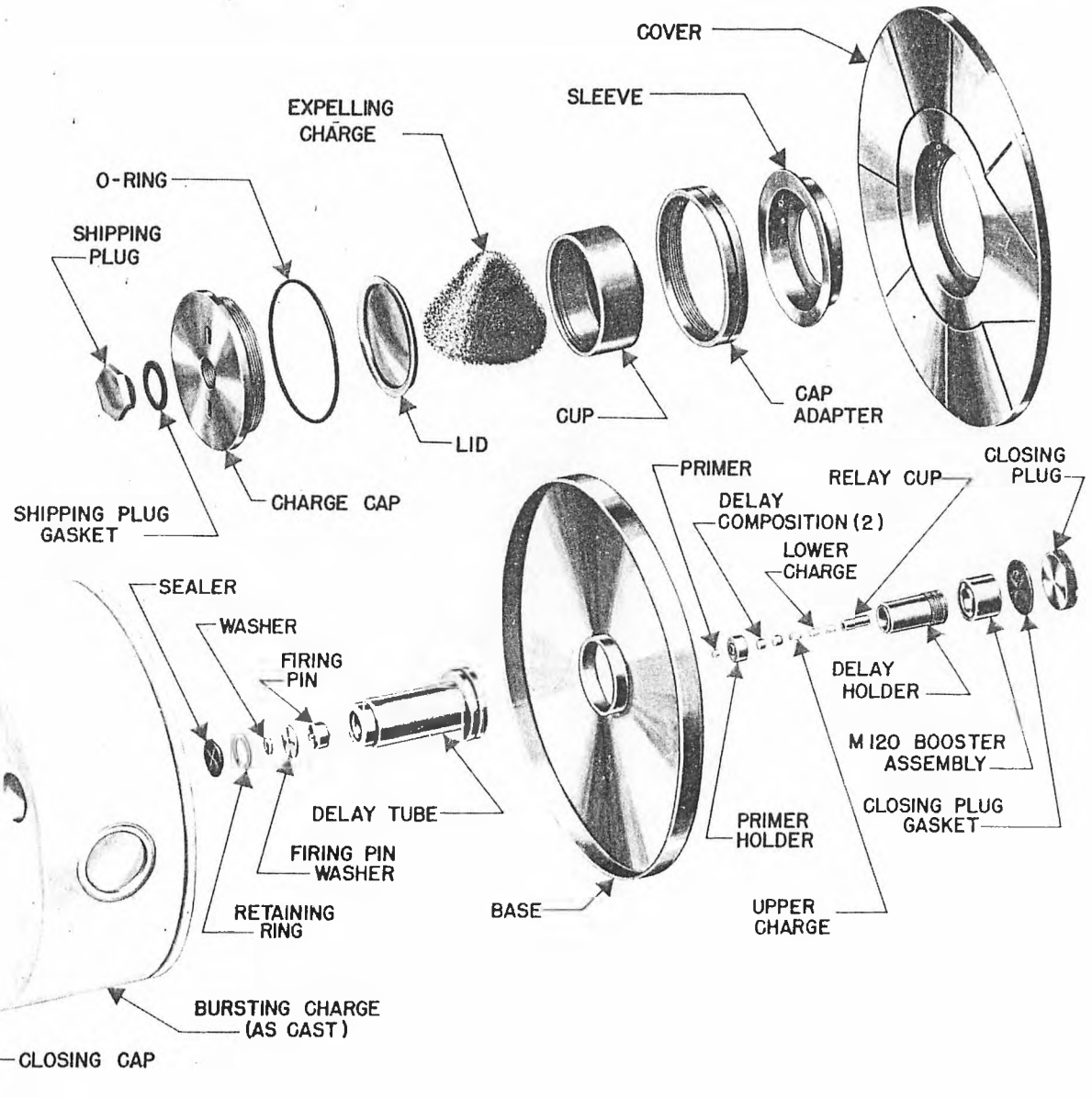
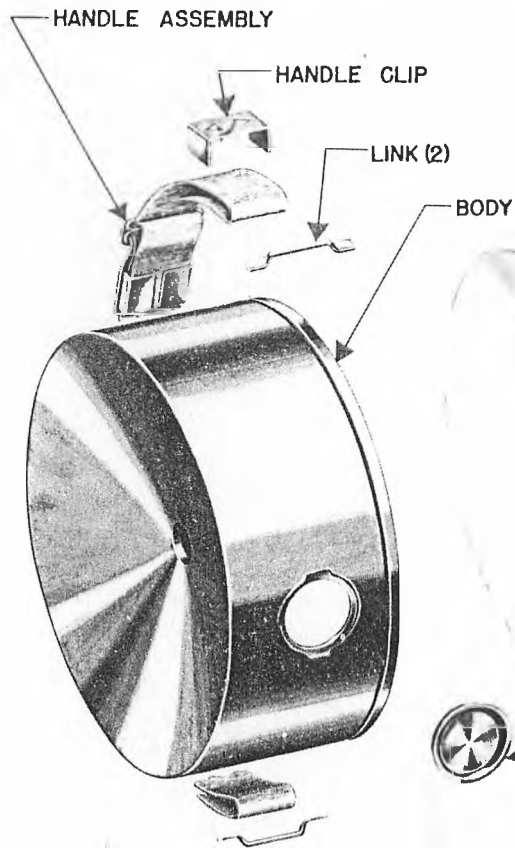




ASSEMBLY



65b



# ANTI-TANK MINE M21





brazing, welding, crimping and adhesive bonding, various components require zinc and cadmium plating, anodic coating, phosphate and painting. Assembly must withstand an internal air test from 4 to 10 PSI. Each lot must withstand a Special Exfoliation test of the cover, using an inert loaded mine with a loaded propellant cup assembly, a primer-loaded delay assembly, and a M607 combination mine fuze. This test is to be performed by the contractor. Contractor shall provide and maintain an effective quality assurance system in accordance with Spec MIL-I-45208. Manufacturing firms bidding on this item will require a competent technical staff of engineers, metallurgists and tool engineers to design and maintain precision tools and gages for high production. This item is considered very difficult to produce to meet Ordnance specifications.

10931. MINE, AT, XM24E1

This item essentially consists of the Firing Device, Demolition, XM61, Rocket Launcher Assembly, XM143 and the Cable Assembly, Vehicle Detector. Fundamentally, the complete assembly is a complex electro-mechanic device. Major assembly drawings for these basic units which are part of the complete XM24E1 end item are classified.

10579. MISCELLANEOUS COMPONENT PARTS, BLU-4A, B, TAB

Approx. 2.25" x 2.6" bent sheet .022" thick, material, steel 1007 to 1020, cold-rolled, Finish No. 1122 of MIL-STD-171. Band, Rotating, 0.15" about 0.50 x 8.15" with punched slots, material, steel 1007, OAC-PD-32, protective finish, No. 1122 of MIL-STD-171. O-Ring, purchased, Ring, Retaining, about 2.5" O.D. x 0.102" thick, material, Aluminum Alloy, 6061-T6. Sabot Assembly, about 1.79" Outside Diameter x 0.88" molded phenolic compound Type CFI-20, Spec. MIL-M-14. Yoke Assembly is composed of two parts: Yoke, 0.013" bent sheet, about 0.31" wide x 2.2" long spheroidized annealed 1050A steel, protective finish, 3.3 of MIL-STD-171: Shim Yoke, formed low carbon sheet 0.018" thick, about 0.65" x 0.4" Screw, about 0.320" O.D. x 0.28" long, material corrosion resistance steel. All aluminum steel and phenolic parts must withstand the salt spray test requirements.

10572. MOTOR, ROCKET, M3A2, METAL PARTS ASSEMBLY

Is 21-1/2" long x approx. 5-3/8" diameter, 5 assemblies and 13 components, Body, 5-1/8" O.D. x 13-3/4" long, 4-3/4" I.D., dome shape head 3/8" thick, open end threaded 5-1/16" - 12 threads, material, for spinning method, steel, C1020, final mechanical properties 70,000 PSI Y. S. elongation in 2", 6%, for other fabrication methods, steel, 4130 annealed, elongation in 2", 6%, Spec. QQ-S-626, hydrostatic test, 4500 PSI min. Front trap assembly: Rod, 12-3/4" long x .12" diameter upset to .13" for .61", material, steel, wire finish #1, FSL010 to 1020. Trap, 4-9/64" diameter x 1/4" thick with three lugs on outside diameter with three webs 1/4" wide - 120 degrees apart, 5/8" center hub, material,

steel, forging, C1010 to C1025, Spec. ASTM A107, A108. Rod drive swaged into center hole of trap. Igniter plug assembly: Washer, 2 each, split, standard. Nut, hex head, standard. Plug Assembly: 4 components: plug, 2 pale, parallel, 10 amps, style No. 432, 250 volts, non-polarized finger grip, long hole diameter .406" material, rubber, cable, 2 each, 32" long, size AN20, material, wire, copper, electrical, wire, shorting, 2 turns over prongs of plug. Terminal, 2 each, standard crimped to cable ends. Igniter Closure Assembly: Stud, terminal, 2 each, 1-1/8" long x No. 8 (.164) 32 threads both ends with 5/16" knurled collar in center, material, brass alloy 6B, Spec ASTM 8146. Igniter, closure, 2" O.D. cup shaped, tapered to 1.8" base O.D., .13" wall thickness, material, plastic, phenolic type, 2 terminal studs molded into base. Nozzle, bottle shape, 5-3/8" base O.D. x 9-3/8" long x 4-3/4" base inside diameter, necked down and flare tapered to 2-39/64" I.D., 5-1/16" 12 threads in base end, material, shear spinning; steel, SAE 1008, cold pressing quality, manganize range .25-40, hardness RB-80-95, alternate material, forging, steel, 4130, hardness RB-80-95. Rear trap assembly: Rod, 6 each, 12-3/4" long x .12" diameter upset to .13" for .61", material, steel, wire, finish #1, FS1010 to 1020. Trap, rear, 5" 13/16" thick with six webs 3/8" wide, center hub 1-1/8" diameter, material, steel, forging, C1010 to 1025, ASTM A107, A108, 6 rods drive swaged into center of each web. Manufacturing firms bidding this item will require a technical staff of engineers, metallurgists and tool engineers to design and maintain precision tools for mass production quantities normally required. This item is considered very difficult to manufacture.

11271. MOTOR TUBE ASSEMBLY, f/M28A2 HEAD ASSEMBLY f/3.5" ROCKET MPTS

11272. MOTOR TUBE ASSEMBLY, f/M29A2 HEAD ASSEMBLY f/3.5" ROCKET MPTS

Motor tube assembly f/M28A, M29A2, and M30 head assemblies f/3.5" rocket, 9.89" L x 2.01" OD. Consists of five major parts. Body motor approx 6" L x 2.010" D one piece component tail end formed into a nozzle exterior of nozzle end knurled, forward end thread. Material: steel, tubing, FS4140, seamless mechanical, two hydrostatic pressures will be required. Closure motor, 1.17" H x 2" D, various drilling and machining operations, both ends, externally threaded. Material steel, FS1117 AS-cold finished, minor component with closure is a steel disc approx 1.25" D. Extension nozzle 3.187" L x 2.38" D at nozzle, and ID at other end 1.30", funnel shaped, .046" wall thickness, material: aluminum alloy sheet, temper, O. Fin 3-7/8" L, 3 double blade fins, crimped or riveted to nozzle extension 60 degrees apart. Material: aluminum alloy sheet, temper H24 or H34. Other components consist of ring support, ring contact, rivets, ring insulator and terminal ground. This item is considered difficult to manufacture. Firms bidding this item will require a staff of engineers, chemists, metallurgists and tool designers to produce in accordance with required ordnance specifications.

10697. MODIFICATION KIT, TUBE EXTENSION

Consists of five tubes 2.879" ID x .020" wall thickness varying in length from 10.50" to 17.00", ends are beveled varying from 1.56" to 11.25"; Material: Tubing, aluminum alloy, 6061-T6, Specification ASTM B-210 or ASTM B-221; Protective Finish: System 7.3 of MIL-STD-171, color optional except clear not permitted.

10587. OBTURATING MECHANISM F/4.2" MORTAR ROUND

6.10" L x 4.15" max D, consists of 11 components. Pressure Plate, 4.153" D x 0.33" thick, material, aluminum alloy 2024, Temper T4, ASTM B209, B211 or B221. Cartridge Container, 2.90" L x 1.505" OD, 0.808" ID, 1.5-16UNS-1A-LH and a .9374-14NS-2B-LH thread on one end with a 1.125-14NS-12A-LH thread on the opposite end, twelve 0.2187" D holes in 3 staggered rows on the circumference, material, steel, C1117 or C1118, CF, round, ASTM A108. Cartridge Container Extension, 2.965" L x 1.32" OD, 1-3/16-16 NS-2A-LH thread on one end, .86" bore to a depth of 1.765" on same end, 1.06" bore to a depth of 0.46" on opposite end, 0.185" hole through web between the above bores, material, aluminum alloy, 6061, ASTM B210, B211 or B221, material, brass, cartridge, No. 6 ASTM B19 or B36. Rotating Disc, 4.178" OD x 0.447" thick, material brass, cartridge, ASTM B-19. Striker Nut, 1.045" L x 1.32" OD, 1.125-14NS-2B-LH and 1-3/16-16 UNS-2B-LH threads, various bores, counterbores and chamfers, material, steel, bar, C1137 to C1141, ASTM A108. Pressure Plate Nut, 1.90" OD x 0.32" thick, 1.5-16UNS-1B-LH thread, material, aluminum alloy 2024, Temper T3, ASTM B210 or Temper T4, ASTM B211 or B221. Pin, Aluminum, 2.69" L x .22" OD with .02" x 45° bevel one end, collar approx. .50" diameter x .184" thick, material aluminum alloy 2024-T4, ASTM B211, Spec. MIL-A-2550 applies, finish all over 125. Holder, Propellant, Steel Music wire, ASTM A228, protective finish No. 1.1, 1.3, 1.1.2.2, 1.9.1.3 of MIL-STD-171, formed in general "U" shape with various bends, must be snug fit with 1.187 D grooves in Ctg. Container & extension. Open end of "U" is .64" two 60° bends in curve of "U". Other small components consist of a brass striker point and striker plate. The items underlined above are procured as separate items. These items are not considered difficult to produce.

11132. OGIVE f/M406, 40MM, CARTRIDGE

Ogive is cup shaped 1.51" D at open end with .51" flat at bottom. Sides are formed to a 1.344" radius. Overall height 1.25". Material-aluminum alloy, sheet and plate, 1100-0, Specification ASTM-B209, .032" thick. Protective finish number 7.1 or 7.2 of MIL-STD-171. This item is fairly simple to produce to applicable specifications.

10291. POLYSTYRENE SUPPORT, M204A2

A single cavitied molded part, half circle in basic shape, approximately 2-1/2" D and 1-1/4" H. The single cavity is a half oval, approximately 13/16" W x 1-1/4" L, and open on one face and one side of the part. The part material is polystyrene plastic foam, Type I, Class I, Specification MIL-P-60312 with Engineering Order 36762-S, dated 18 May 1965, minimum density 3 pounds per cubic foot, green color number 34373 or darker of Fed - STD - 595. Introduction of moisture is inherent to some mold processes, and its subsequent removal from the molded part must be accomplished per requirements of Specification MIL-P-60312. Parts must be anti-static coated with anti-static agent such as Catanac SN, or approved equal. Parts will be packaged and packed in accordance with Specification MIL-P-60312. This item is considered difficult to manufacture in accordance with applicable drawings and specifications, and especially the drying, anti-static coating, testing, and packaging requirements.

11149. PROJECTILE, TRAINING, 60MM, M69

Is a tear shaped gray iron casting, Class 20, Specialist QQ-1-652, 5.5" L, 2.34" D at the Bourrelet and tapers down to .98" D at the small end. Weight is from 3.83 lb. to 4.07 lb. 250 micro finish except Bourrelet 125 micro finish, small end has threaded hole .625-18UNF-2 maximum depth .51"; coat entire exterior surface of projectile with finish 5.1.1 + 20.1 Blue No. 35109, of MIL-STD-171. This is not considered difficult to produce in accordance with applicable standards and specifications.

10576. PLUG, LIFTING TYPE, DETECTOR, ASSEMBLY

Is 2.45" diameter x approx. 3-1/3" long, eyebolt design, 3 components. Plug, lifting type, 2.45" flange, .53" O.D. eyebolt section x 1.23" I.D. eye, 2" 12 thread base with 7/16" 20 thread hole thru flange, material, steel, forging, Spec. MIL-S-13048 or malleable iron casting, Spec. QQ-I-666, finish, zinc phosphate and paint, thread only will be coated with silicone compound, Screw, collar, hex head, 7/8" diameter collar below 5/8" across flats on head, 7/16" 20 thread x 3/4" long, material, steel, Spec. QQ-S-633. Washer, 3/4" O.D. x .459" I.D. x 1/16" thick, material, lead, sheet, grade B, Spec. QQ-L-201. This item is not considered difficult to manufacture to applicable specification.

07035. PLUG, LIFTING, EYEBOLT, TYPE G

2.45" diameter x approx. 3-27/32" long, eyebolt design, 2" NS threaded base, eye diameter 1.23", material, steel forging, Spec. MIL-S-13048, alternate steel casting, Class 65-35, Spec. QQ-S-681, alternate malleable iron, casting, Spec. QQ-I-666, Surface finish zinc or iron

phosphate base, Spec, finish No. 5.1 of MIL-STD-171 detail Spec. TT-C-490, salt spray test not mandatory, followed by paint system 20.1 or 20.2 of MIL-S-171, Color green No. 34087 or Fed, Std. 595. Threaded base to be coated with silicone compound, D6-6, supplied by Dow Corning or GS-81508 supplied by General Electric or any acceptable compound evaluated as acceptable by the responsible Engineering Agency. Tension test of 8.000 pound required. This item is not considered difficult to manufacture to applicable specifications.

09989. PROJECTILE, 40MM, BODY ASSEMBY, M384, METAL PARTS

Consists of body, steel, and blank band copper tubing. Body is impact extruded material 1030 steel ASTM 1076-1T special quality. Extruded cup shape outside dimensions of 1.855" long and 1.494" O.D. wall thickness varies, maximum .107" thick. Tapered base and mouth has inside thread of 1-15/32-24NS - 2B. Body is machine finished with groove .36" wide around body and bottom of groove, 96 DP diamond knurled. Protective Finish No. 1.1.23 of MIL-STD-171, color green No. 34151 to 34079 or Red STD-595. Band is copper tubing seamless, Spec. WW-T-797, I.D. 1.56" and .072" thick and .365" long. Body assembly has band swaged to body and a groove machined in body to the rear of band. Manufacturer will require the use of extrusion equipment and protective finish dipping equipment. Screw machines to machine body before and after band is swaged to body are required. This item is considered very difficult to manufacture to meet applicable drawings and specification requirements.

00494. PROJECTILE, 40MM, PRACTICE, M385

Consists of body and blank band. Body is approximately 3.164" long x 1.602" diameter with boat-tail shape base and rounded nose with band seating groove approximately .1364" wide. Material, aluminum alloy bar 2024, T351-ASTM B211-63, Protective finish No. 722 of MIL-STD-171, blue No. 35109 approx. of Fed, Std-595. Blank band is tubing, copper, seamless, spec. WW-T-797. Band is approx. 3.65" long x I.D. 1.56", .072" wall thickness. Blank band is to be swaged to body and two grooves machined around the band.

07896. PROJECTILE, 40MM, M406, METAL PARTS

Consists of the following components parts: Ogive, parabola shape, formed from aluminum alloy sheet and plate, 1100-0, Spec. ASTM-B209, .032" plus or minus .002" thick. Protective finish No. 7.1 or 7.2 of MIL-STD-171. Color, yellow, No. 33538 per FED-STD-595. Ball assembly consists of Ball, 1.5" spherical diameter with parallel flats on side 1.259" apart, from notched wires, flats bored and counter-bored of material: wire, steel, FS 1010, Composition A, Temper annealed, finish No. 1 or No. 2 bright, .061" x .150" rectangular, Spec. QQ-W-461. Plug, .793" diameter, with spherical top .062" to .079" thick. Material:

steel strip cold rolled, temper No. 5, Spec. ASTM-A109, Insert, .769" O.D. with .86" O.D. flange approx. centered on .238" width and .59" I.D. with thread .625-32NS-2B. Material steel bar, as cold finished 1117 or 1010 to 1020 incl. Spec. ASTM-A108. Ball and skirt assembly consist of ball assembly described above with Skirt, 1.50" long x 1.623" O.D. with machined flanges at center and one end 1.375" I.D. one end spherical radius I.D. opposite end. Material, aluminum tubing alloy 6061-T4 or 2024 to physical properties to be in accordance with Table II, Spec. ASTM-B210,, protective finish No. 7.3 of MIL-STD-171, and color in accordance with FED-STD-595. Skirt to be assembled to ball assembly by swaging the skirt over ball with adhesive. Manufacturing firm bidding this item will require a competent technical staff of Engineers Metallurgists and Tool Design Engineers to design and maintain precision tool required for mass production of component parts. This projectile is considered very difficult to produce to applicable drawings and specifications.

078098. PROJECTILE, 40MM, M407A1, METAL PARTS

Consists of three components, Ogive, Ball and skirt. Ogive, formed parabola shape, 1.51" I.D. at base x 1.25" high x .028" minimum thickness, material aluminum alloy, sheet and plate 1100-0, Spec. ASTM-B209, .032" plus or minus .002" thick, protective finish, finish number 7.1 or 7.2 of MIL-STD-171. Color to be gray, 26178 through 26280 or 36280 or 36231 through 36307, per FED-STD-595. Ball, spherical shape, 1.5" O.D. x 1.550" high with cavity, .568" diameter x 1.362" deep with 5/8 - 32 UN - 2B threads. Material, lead filled two step phenolic compound, specific gravity approx. 3.5, but ball must meet weight requirements of 84.0 minus to 3.0 GMS. Approved source, Fiberite Corp., Winona, Minnesota, Material Part Number X8715, or Picatinny Arsenal approval required for equivalent item. Skirt, approx. 1.62" O.D. x 1.37" I.D. x 1.5" long, machined with various diameters and grooves. Material, aluminum tubing, alloy 6061-T4, or 2024-T0, physical properties to be in accordance with Table 11, Spec. ASTM-B210. Protective finish, finish number 7.3 of MIL-STD-171. Color green, number 34151 to green, number 34079, in accordance with FED-STD-595. Ball and skirt assembled together with adhesive, and skirt is swaged over ball and baked at 200 degrees F Plus 50 degrees F for 15 minutes. Adhesive consists of, by weight: LEFKOWELD Number 46- 100 parts, Activator S-7 parts. Approved sources Leffingwell Chemical Co., Whittier, California. A. Fiberite Corporation, Winona, Minnesota, material No. FM 8715X 1927 (Lead) or FM8720 (Iron), B. Plastics engineering Company, Sheboygan, Wisconsin, material No. Plenco 4443 (iron), C. Durez Plastics Division, Hooker Chemical Company, N. Tonawanda, New York, material No. 24067 (Iron), D. Raybestos Manhattan, Manheim, Pennsylvania, Material No. 500 RPH high gravity molding compound, Marblette Corporation, Long Island City, New York, c. Picatinny Arsenal approval required for equivalent item. After assembly of ball to skirt, sphere shall withstand a torque of 100 inch/pounds applied through a bar inserted in the cavity of the ball, and threads to



withstand 40 inch/pounds minimum torque. Manufacturing firms bidding on this item will require a competent staff consisting of engineer metallurgists and tool design engineers to design and maintain precision tools for the production of precision parts. This projectile is considered somewhat difficult to produce applicable drawings and specifications.

10624. PROJECTILE, 60MM, HE, M49A2E1, METAL PARTS

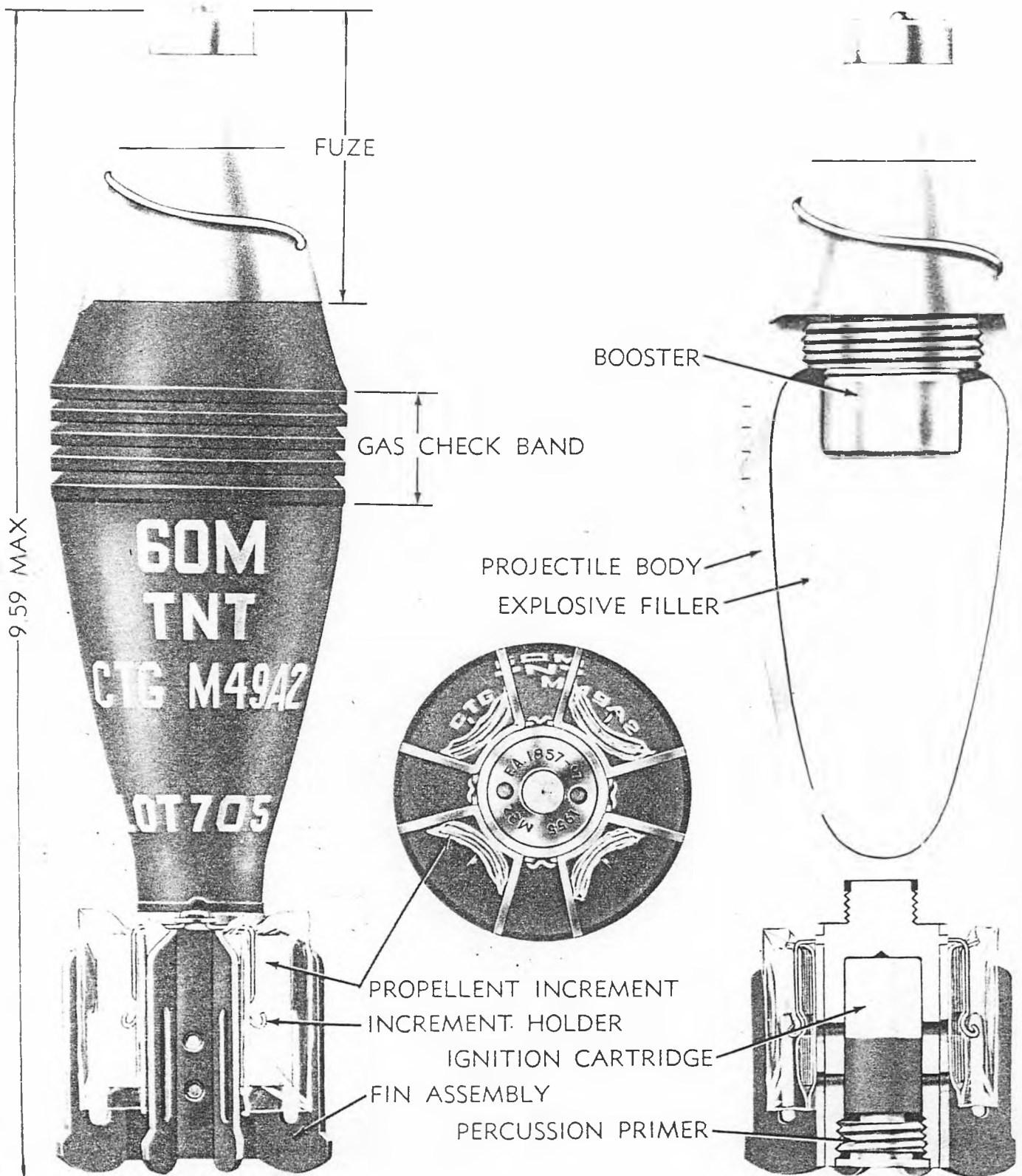
This item is pearlitic malleable iron casting class 53004, Spec. MIL-C-46971. Approx. 5" long and circular in a teardrop shape with a maximum O.D. of 2 3/8" with a .003 tolerance, and a minimum diameter at one end of approx. 1" with a .020 tolerance. Both ends the body are threaded, one end .625-18UNF-2B and the other end 1.5-12UNF-1B. The wall thickness average approx. one-quarter inch on the finished item. The body requires hydrostatic testing at 4000 PSI, air test at 150 PSI, a magnetic particle inspection and radiographic inspection. The protective finish is olive drab paint on the exterior (.9 to 1.5 mil thickness) and a type of acid proof black paint on the interior.

07960. PROJECTILE, 60MM, SMOKE, WP, M302, METAL PARTS ASSEMBLY

Composed of four components, Adapter, 1.48" long with O.D. varying up to 2.31" and I.D. including 1.5-12 UNF threads, material, steel ASTM A108, non-resulphurized, Body, 5.90" Long x about 2.36" O.D. with a minimum wall thickness of .14" with .375-18 UNF threaded hole in closed end, material, steel, non-resulphurized special bar quality, ASTM, Spec. A107, Cap, Protector, .5" deep x about 1.4" in diameter with 1/32" wall thickness, material, Plastisel plastic, VCI Paper about 4.1 x 5.1", material, volatile corrosion inhibitor paper, Type I Class 3, Style C, spec, MIL-P-3420. The completed assembly to withstand an air pressure test of 150 PSI before application of surface treatment and painting. This item is considered very difficult to produce to specification requirement.

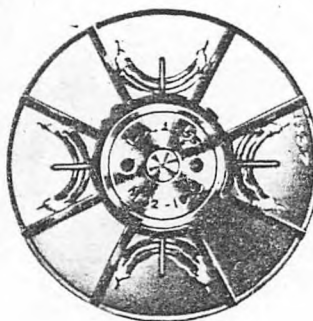
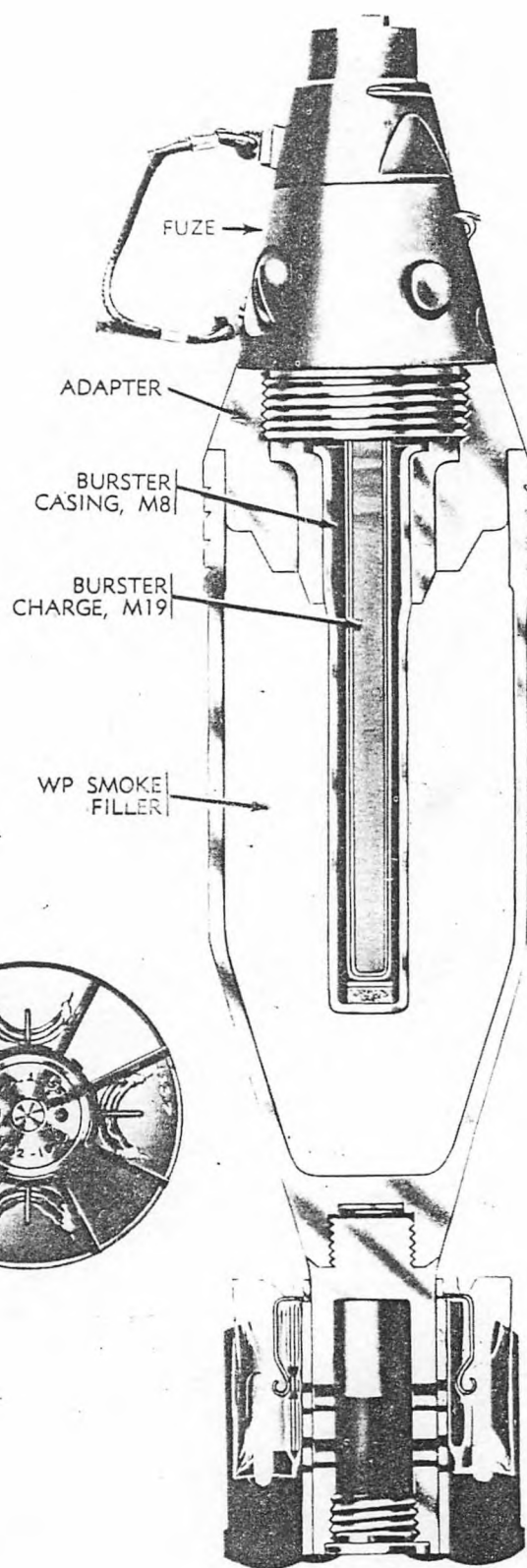
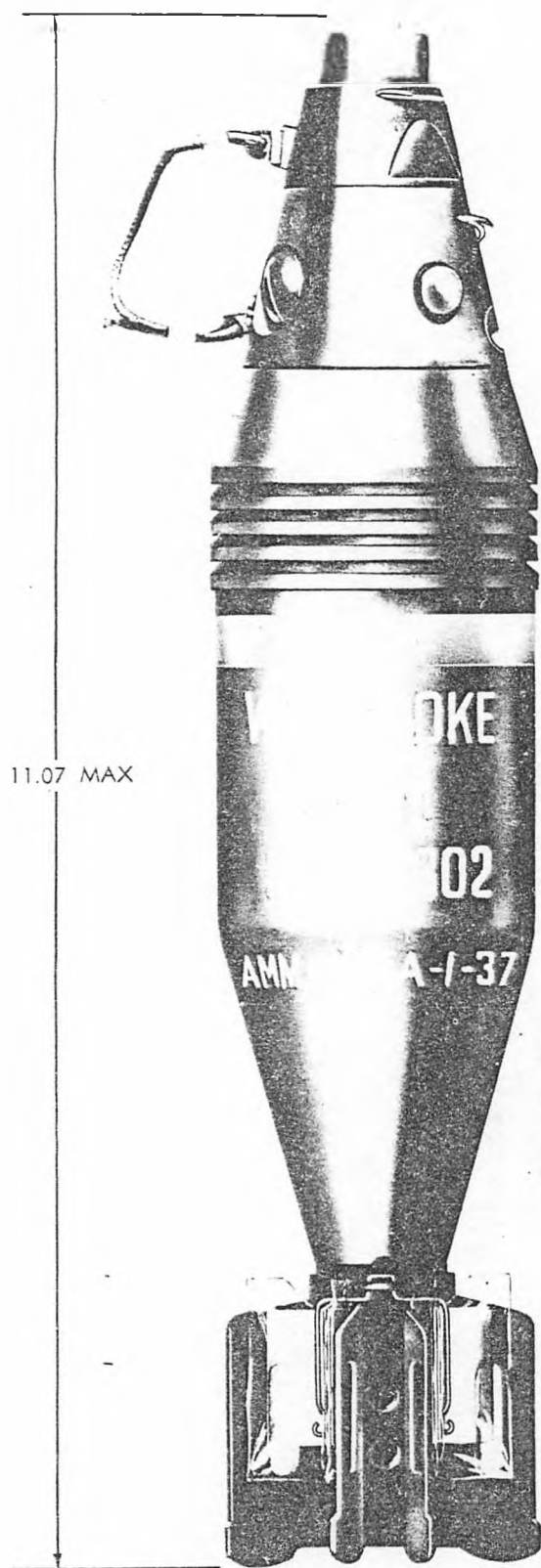
08838. PROJECTILE, 76MM, AP-F, M339

12.07" long x approx. 3" O.D., (3) components, Body Approx. 9" long x approx. 3" O.D., base of solid projectile body drilled and topped to .785" deep x 1.0000 minimum I.D., body machined to accomodate rotating band 2.76" wide x .19" depth, material, steel complying with Spec. FA-PD-MI-2489/ Rotating band blank, 3.50" O.D. x 1.495" long x .244" wall thickness, material, gilding metal, Class B, annealed, Spec. MIL-B-20292. Windshield, cone shaped, 5.88" Long x 2.97" O.D. at base, varying wall thickness, material, aluminum alloy die casting, Composition A380, Spec. QQ-A-591, two desiccant capsules to be secured in base cavity with tape. Metal part assemblies are to be palletized for shipment. Contractor shall provide and maintain an effective quality assurance system in accordance with Spec. MIL-I-45208. Manufacturing firms bidding this item will require a highly competent technical staff of engineers,



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metallurgists, chemists and tool design engineers to design, fabricate and maintain precision tools required for mass production of this item. This projectile is considered difficult to produce to applicable specifications.

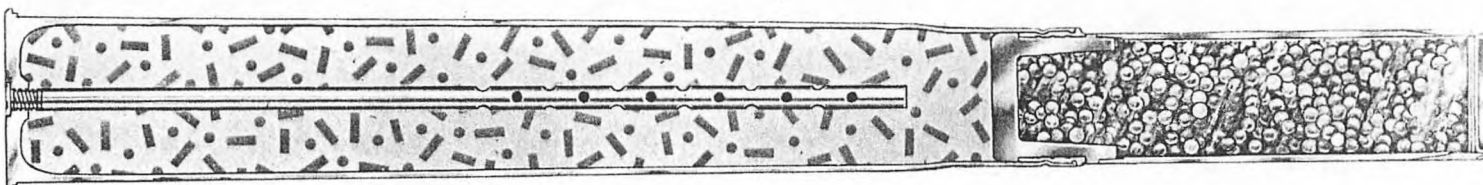
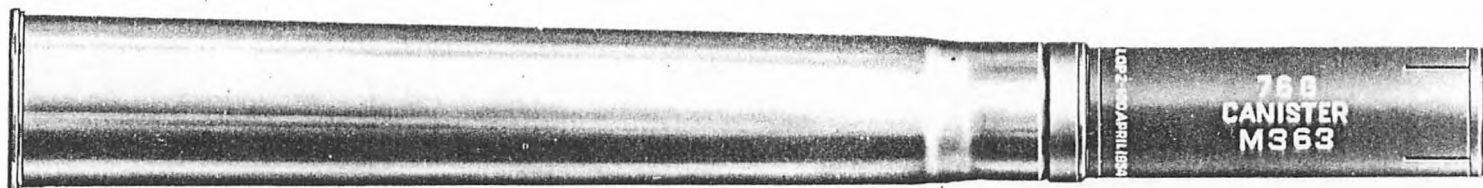
01392. PROJECTILE, 76MM, CANISTER, M363, METAL PARTS

Approx. 11" long x 2.975" diameter, consists of 3 major components, Body, approx. 8.718" x 2.975" O.D. at one end x 2.895" O.D. at other end. One end of wall scored and slit in four places 90 degrees apart, wall thickness .120", both ends machined to assemble the base and closing cup. Material: carbon steel strip, cold rolled, temper no. 2. ASTM, Spec. A109, alternate material, steel tubing, seamless or welded, 1020 CDSR, Spec. QQ-T-830. Base, 2.73" long x 2.890" diameter, interior bored to a depth of 2.187" x 2.245" diameter at mouth and tapered to bottom, exterior of base, machined, scored and knurled for rotating band, one end machined for assembly into body .25" with .06" Chamber. Material: steel, bar, cold finish, 1117, ASTM, Spec. A108. Rotating band 1.495" wide x .244" thick. Material: gilding metal, Class B, Annealed, Spec, MIL-B-20292. Secure body to base in six places by arc-welding finish smooth, for alternate design body only, secure by 360 degrees weld (shielded carbon arc process). Minor components consist of Cup Closing 2.890" O.D. x .0335" thick. Lip' formed on perimeter .350" x .088" gap. Material: carbon steel strip, cold rolled temper no. 3 ASTM Spec A109. Ball.409" spherical diameter, material; carbon steel bar, cold finish, ASTM, Spec. A108. Firms bidding on this item should have a qualified staff of engineers, metallurgists, chemists, and tool designers in order to meet government specifications. This item is not considered difficult to manufacture.

08840. PROJECTILE, 76MM, TP-T, M340A2, METAL PARTS

Approx. 12.05" long x 3" O.D. consisting of 3 components, body, windshield and rotating band. Body, 7.9" long x 2.95" diameter with "projectile shape" nose. Tracer cavity in base end 1" deep with 7/8" diameter thread .4" deep. Material: steel bar, ASTM, Spec. A107. Windshield, 5.88" long x 2.97" diameter at large end, cone shaped, approx. 3/16" wall thickness, material: aluminum alloy die casting A380 Spec. QQ-A-591, threaded 2-7/16" major diameter for a depth of .82". Rotating band blank, 3.5" O.D. x 1.5" long with .24" wall thickness. Material: Gilding metal, Class B, Spec. QQ-B-20292, rotating band is swaged to body and then machined. Windshield assembled to body with sealing compound. Assembly is coated and painted according to MIL-STD-171. Spec. MIL-A-2550 and MIL-STD 8, 9, 10 apply to the manufacture of this item. Manufacture of this item will require a technical staff of engineers, metallurgists and tool engineers. This item is considered difficult to produce in accordance with applicable specifications.





32.07 MAX

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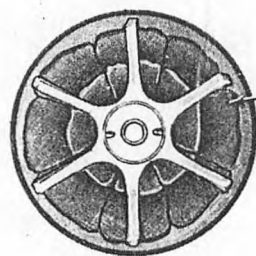
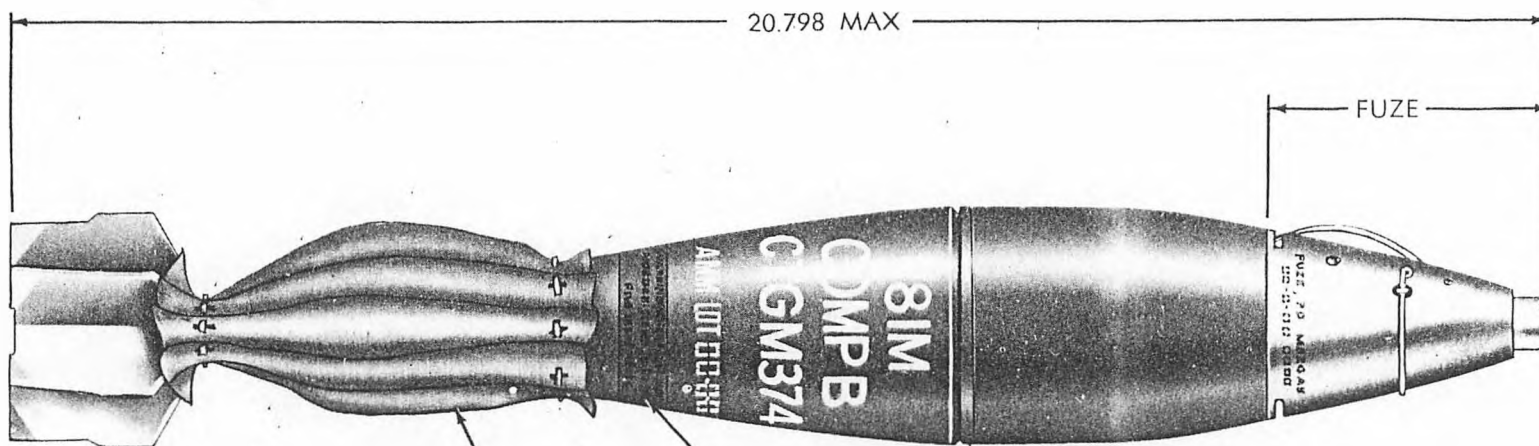
08040. PROJECTILE, 76MM, MPTS, ASSEMBLY LESS FIN AND BOMB, M495

The projectile is approx. 12.5" long x 3" diameter, complete assembly consists of (19) component parts, major components, Body, 7.13" long x 3" diameter with varying wall thickness from .23 to .25", 1-5/8" external thread .91" length one end, 2-5/8" internal thread x 2" length opposite end, Material, steel alloy, Spec. QQ-S-624, minimum yield strength 160,000 PSI, 8% elongation, .1% offset. Spike, 5.345" long, head section, 2.98" diameter x 1.22" length, stem section, 1.145" diameter x .75" bore, head section bellmouth to 2.407" external threads both ends, material, steel, alloy, Spec. QQ-S-624, minimum yield strength 125,000 PSI with 10% elongation .1% offset. Cone, 3.06" long x 2.559" diameter, funnel shape to .628" small end, .07 wall thickness, material, copper sheet, cold rolled, deep-drawing, annealed, Spec. QQ-C-576. Boom, 6.975" long x 2-5/8" diameter tapered to 1.075" at small end, external thread small end and counterbores and internal thread large end, material, aluminum alloy, Spec. 2014-T6 or QQ-A-200/A or QQ-A-225/4A or QQ-A-367 or MIL-A-12545. Fin, 2.85" long x 2.985" diameter with (6) webs with "T" shape lugs, center section 1" diameter with counterbores and internal threads both ends, material, aluminum alloy extrusion, 7075-T6 or Spec. QQ-A-200/11A, other component parts consist of plastic conduit, steel locking ring, steel spacers, aluminum plug, propylene polymer insulator, plastic cap protector, aluminum eyelet terminal, 1/32" diameter stainless steel aircraft cable with molded plastic cover and palletized with steel strapping. The assembly must withstand rigid tests such as magnetic particle on the body, electrical continuity and resistance. air pressure 3 pound per square inch for 30 seconds, ballistic tests for metal parts security and salt spray 144 hours. Manufacturing firms producing this projectile will require a highly competent technical staff of engineers, metallurgists and tool engineers. This projectile is very difficult to produce in accordance with applicable specifications.

10109. PROJECTILE, 81MM, HE, METAL PARTS, MORTAR M374

Body Assembly, 10.403" maximum length x 3.184" O.D. consists of (4) component parts, Body, 9.50" long x 3.182" diameter near center, tapered to 2.38" diameter at front end and 1.835" at rear end with varying thickness from .185" to .25". nose thread 2.00-12NS-1B, end bore to 1.62" for brazed in adapter, material, pearlitic malleable iron, Grade 50007, Spec. MIL-C-46971, physical properties, yield strength 50,000 PSI minimum .1% off-set, elongation - 7% minimum, Adapter Base, 1.26" long x 1.800" maximum diameter, one end threaded 1-1/8-18-NEF-2A, material, carbon steel, special bar quality, ASTM Spec. A107, or A108 applies, alternate material, pearlitic malleable iron, Grade 50007, Spec. MIL-C-46971, physical properties, yield strength 40,000 PSI minimum, .1% offset, 10% minimum elongation, mechanical property requirements of MIL-C-46971 apply for alternate





PROPELLANT INCREMENT CHARGE B

PROPELLANT INCREMENT CHARGE A

PRESSURE PLATE

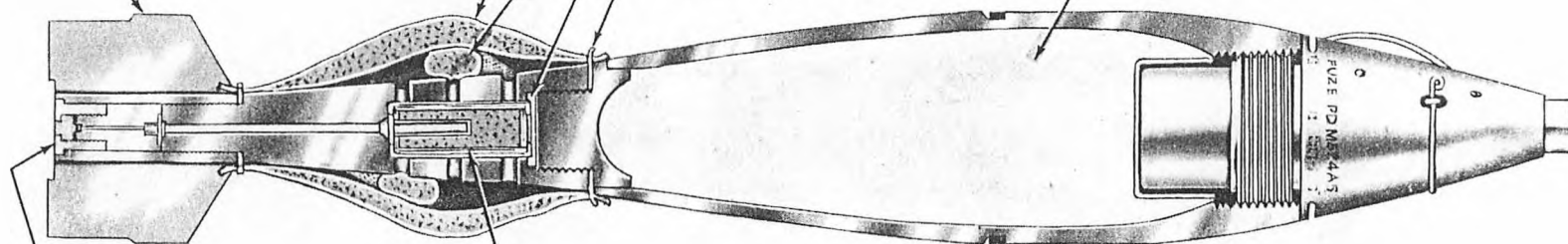
INCREMENT HOLDER

EXPLOSIVE FILLER

FIN ASSEMBLY

PERCUSSION PRIMER

IGNITION CARTRIDGE



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material, Cover, base, 1.02" diameter x .0209" thick, material, cold-rolled carbon steel strip, Temper Number 4, ASTM Spec. A109 hydrostatic test and 150 pound PSI air test. Body requires 100% ultrasonic inspection and magnaglo. Band, Obturating, 3.500" diameter x .187" thick, material, pipe, plastic, Spec. PA-PD-2521. Body assembly prior to assembly of band, obturating requires phosphate coat and paint. Manufacturing firms bidding this item will require a highly competent technical staff of engineers, metallurgists, chemists and tool design engineers to design, fabricate and maintain precision tools required for mass production of this item. This item is considered very difficult to produce to applicable specifications.

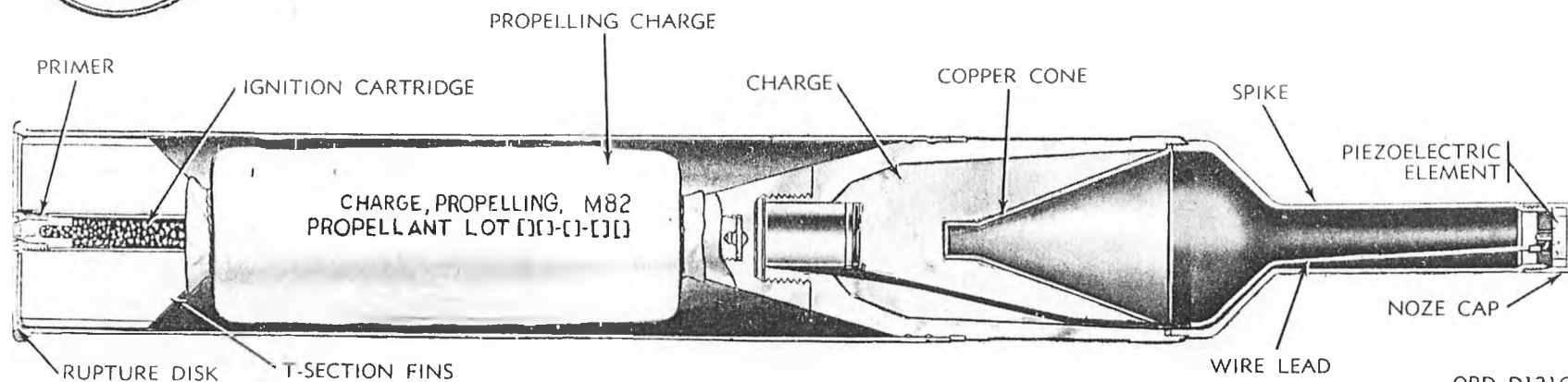
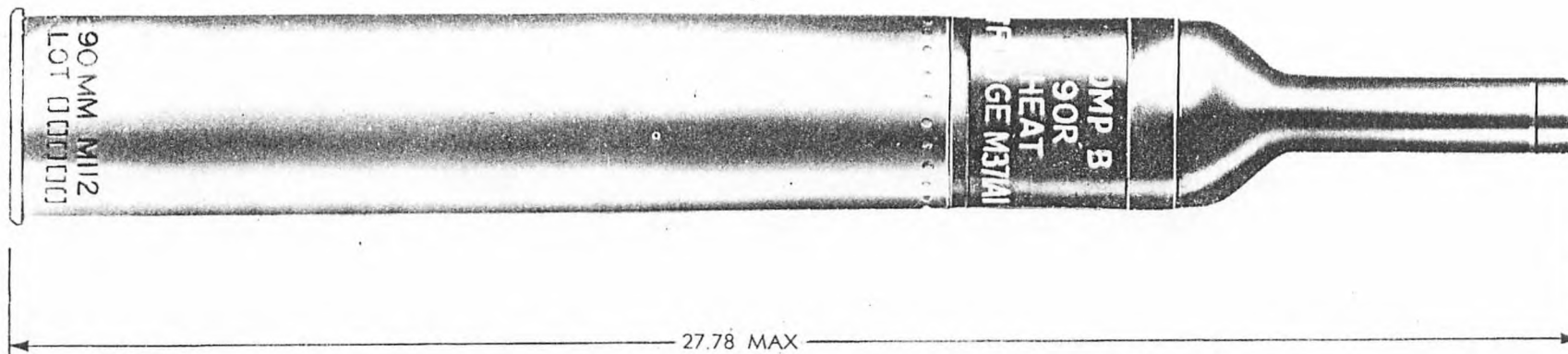
10163. PROJECTILE, 81MM, MORTAR M375, SMOKE, WP

Consisting of two components. Body, 10" long, varying on O.D. from 2.595" at nose to 3.115" on bourrelet to 1.705" at the base, varying wall thickness .235" on bourrelet, .20" at mid-section, .185" at base section, machined internally in nose section to accept press fit burster casing, threaded externally at base to accept fin assembly, O.D. of body grooved 360 degrees to accept obturating, band, material, steel, non-resulphurized, carbon bar, hot-rolled, special quality, ASTM Spec. A107, alternate material, steel, non-resulphurized, Spec. MIL-S-11310, yield strength 60,000 PSI, 1% offset, 12% elongation. Band obturating, 3.500" O.D. x .187" thick, I.D. 2.895", six 60 degree x .037" deep grooves equally spaced inside of band, material, pipe, plastic, Spec. PA-PD-2521. Firms bidding this item must have qualified metallurgists, chemists and tool designers to fabricate this item in accordance with applicable specifications.

08190. PROJECTILE, 90MM, HEAT-FS, M371E1, MPTS, ASSEMBLY

14.47" long x 3 1/2" diameter, consists of (3) component parts, major components, Body, 6.46" long x 3.54" O.D., tapered nose, 3.5" I.D., tapered wall thickness, with knurled obturating band seat, thread both ends, material, aluminum alloy, QQ-A-261, QQ-A-266, QQ-A-267, QQ-A-268 or aluminum alloy bars, Spec. MIL-A-25493 or aluminum forging alloy, Spec. QQ-A-367, Obturating Band 3-13/32" I.D. x 3-5/8" O.D. x .245" wide, material, rigid polyvinyl, type 1, class 2, grade C, Spec. L-M-S30, Adapter, 2.49" long x 2.5" base O.D. and 1.3" top O.D. truncated cone shape, counterbored and threaded top and bottom, material, aluminum alloy, Spec. MIL-A-25493 or aluminum alloy forging QQ-A-367, Cone, 3.99" long x 3.31" diameter tapered to .628" diameter x .07" wall thickness, material, copper, sheet, cold-rolled deep-drawing annealed, Spec. QQ-C-576, cone metal processes, flow-turn, rotary-extrusion, shear-form, or hydrospin, Spike, 6.7" long x 3.88" bell-mouth diameter, body section - 1.25" neck diameter x approx. 4.85" long, wall thickness .055" at neck, .19" bell mouth section, material, steel, C1010 to 1040, B1113 or C1117, Spec. QQ-S-633, Fin, 12.53" long x 3.5 diameter, (6) webs with "T" shape lugs,





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center section .8" diameter, boom section - drilled 11.2" deep x .56" I.D., wall thickness .08" minimum, internal thread in fin base and external thread on opposite end, boom section has (6) narrow webs, 1.146 diameter, material, aluminum alloy extrusion, yield strength 42,000 minimum, tensile strength 57,000 minimum, elongation 6% minimum, other parts consist of conduit, nose cap, insulator, terminal eyelet, wire lead, sleeve and wave washer, etc. Manufacturing firms producing this item will require a highly technical staff of engineers, metallurgists and tool engineers. This item is considered extremely difficult to produce in accordance with applicable specifications.

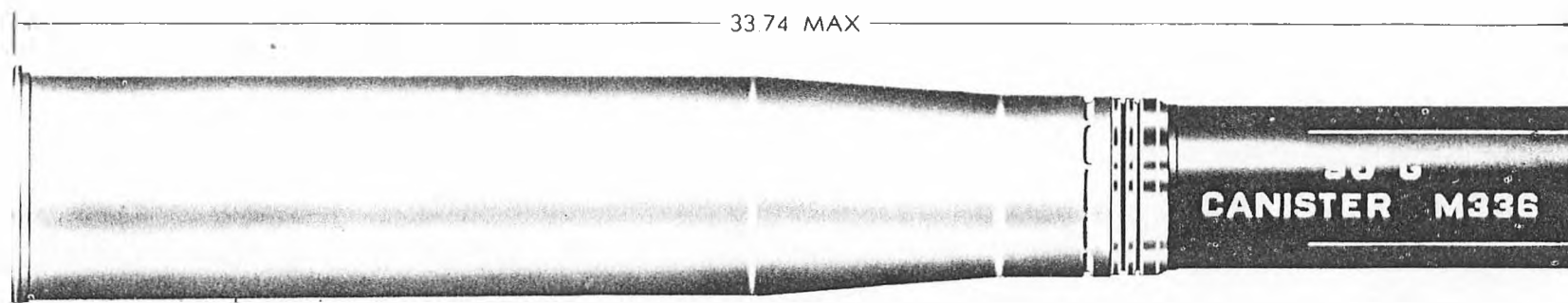
08900. PROJECTILE, 90MM, TP-T, M353, METAL PARTS

Is 14.2" maximum long x 3.537" O.D., (5) components, Body, approx. 10.15" long x 3.537" O.D. one piece design, threaded nose section, rotating band and crimping grooves, base section 7/8" thread x 1.05" deep center hole, material, steel, HR carbon bars, excluding Bessemer stock Spec. ASTM-A107, Rotating Band, blank, 3.55" O.D. x 1.255" long x .21" wall thickness, material, gilding metal, Class B, annealed, Spec. MIL-B-20292, Windshield, cone shape, 6.928" long x 3.51" O.D. at base, base has 2 3/4" I.D. thread, varying wall thickness, material, Aluminum alloy die casting, Comp A380, Spec. QQ-A-591, Body and windshield assembled with thread sealing compound, cleaned and painted, 200 lb minimum torque applied assembly, Plug and Disc Assembly, (2) components, Plug, 7/8" O.D. thread x .34" long, 5/16" bore, with .44" counterbore, plus (2) 7/64" x 1/8" deep holes in base, material, Aluminum alloy, 2024, T4, Spec. QQ-A-267 or QQ-A-268, finish, anodic film, Disc, .435" O.D. x .004" thick, material, brass, composition 2, Spec. QQ-B-613, disc crimped into plug. 360 degrees and sealed into plug with adhesive, plibond 20 or government engineering approval equal. Plug and disc assembly is shipped separately. Body assemblies are palletized for shipment. Band seating shall be tested using a Detroit testing machine. Contractor shall provide and maintain an effective quality assurance system in accordance with Spec. MIL-I-452-08. Manufacturing firms bidding this item will require a highly competent technical staff of engineers, metallurgists, chemists and tool design engineers to design, fabricate and maintain precision tools required for mass production of this item. This projectile is considered very difficult to produce to applicable specifications.

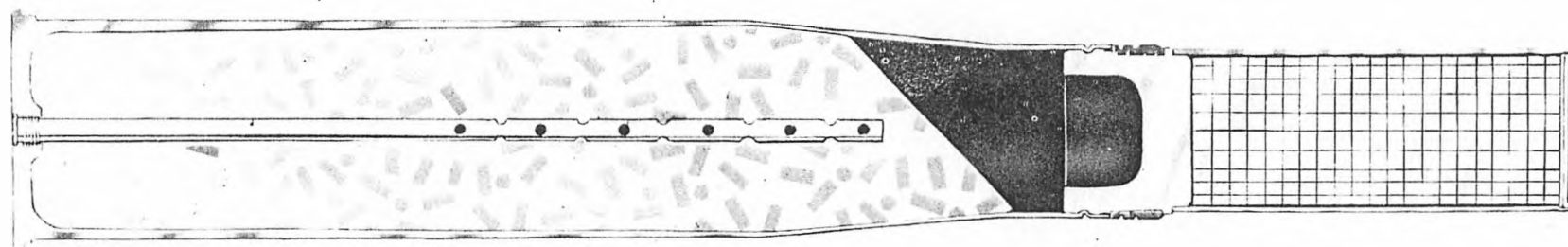
10707. PROJECTILE, 90MM, CANISTER, M336, METAL PARTS

Consists of 5 components, overall length, approx. 11" x 3.515" O.D. Tube 8.68" long x 3.515" O.D., .108" thick one end counterbored to a 3/8" depth x 3.310" I.D., same end with 6 slots cut 60 degrees apart to a depth of .23" x 7/8" wide, other end counterbored to a depth of .25", I.D. 3.294". Same end has 4 grooves 90 degrees apart machined to a length of 5.97" x .020" deep. Material: Carbon steel tubing, electric resistance welded, normalized condition, ASTM, Spec. A513,





77a



PROJECTILE. CANISTER. 9mm, M336

ORD D1618



paragraph S5.2 applies. Alternate material: Carbon steel tubing, seamless, normalized condition, ASTM Spec. A519, carbon steel strip, cold rolled, temper no. 2, finish no. 1, ASTM Spec. A109 yield strength 35,000 PSI, 15% elongation. Tube alternate 8.68" long x 3.515" diameter, one end counterbored to a depth of 3/8", I.D. 3.310" other end counterbored to a depth of .25" I.D. of 3.294", same end has 4 grooves machined 5.97" long x .020" depth on exterior. Materials same as tubes above. Base 2.67" long, 3.310" diameter at one end x 3.537" at other end. Larger end bored to a depth of 1.60" x 2.60" diameter, piece is machined and scored for rotating band, crimping groove machined below band seat, other end machined 3/8" for assembly of tube. Material: steel, special quality, non-resulphurized, ASTM Spec. A107. Alternate material: steel, non-resulphurized, ASTM Spec. A108 and steel non-resulphurized, spec. MIL-S-11310. Blank rotating band 1.255" high I.D. 3.55" thickness .210", Material: gilding metal, Class B, annealed, spec. MIL-B-20292. Disc closing cup shape, 3.293" O.D., 360 degrees lip formed to .25", thickness .0806". Material: carbon steel, strip, hot rolled and pickled, commercial quality, ASTM Specification A425. Slug .378" long x .376" diameter, material: steel, ASTM Spec. A108. On assembly of base to tube alternate secure by 360 degrees weld (shielded carbon arc process). Firms bidding on this item must have a staff of engineers including tool designers to manufacture this item in accordance with applicable ordnance drawings and specifications.

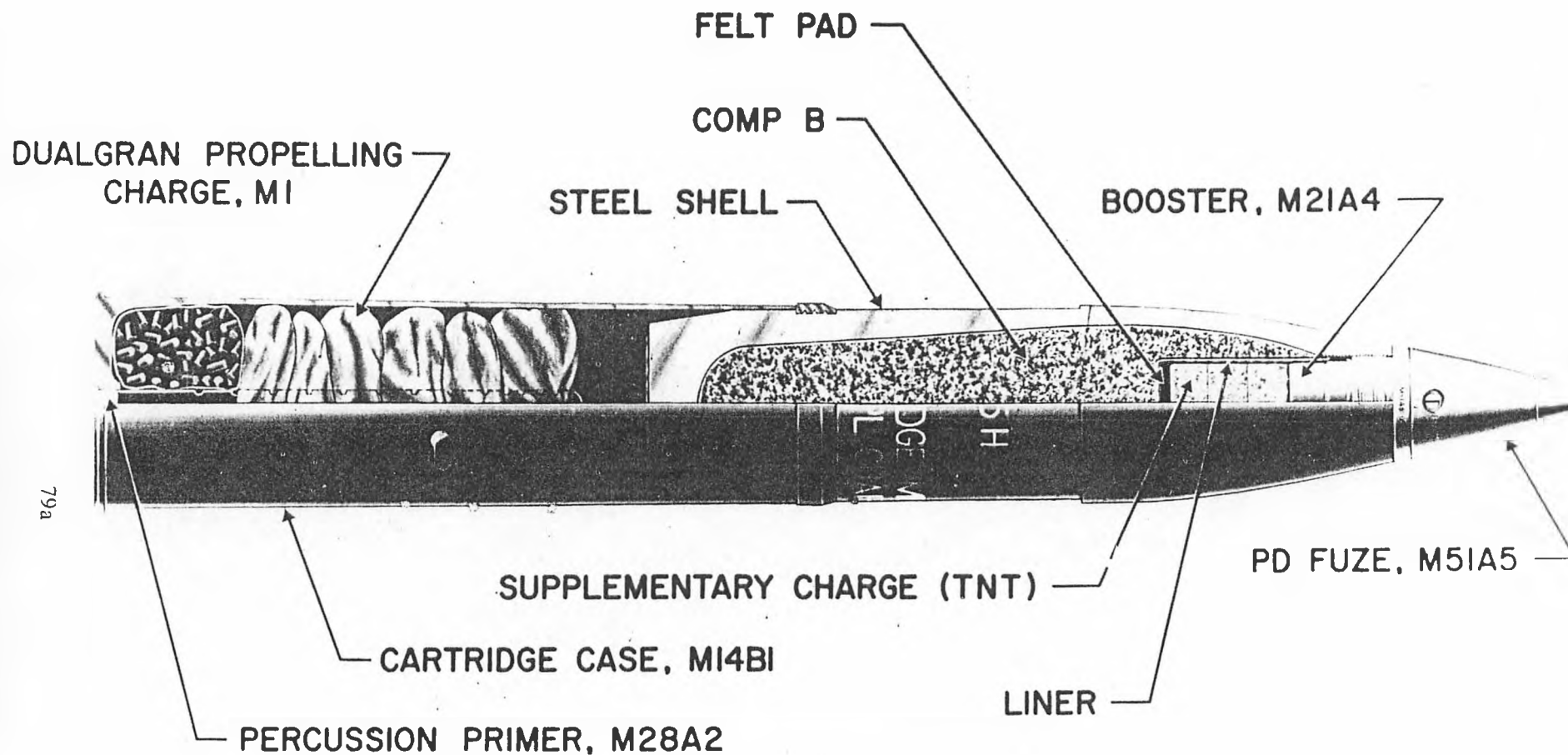
10568. PROJECTILE, 105MM, APDS, M392A1 METAL PARTS

Consists of six (6) major components, approx. 11" long x 4.125" diameter with conical shaped nose, unit weight 12.94" pounds. Base, 2.20" long x 3.5" to 4.08" O.D. at base x 2.887" O.D. at forward end, interior forward end of piece machined from 2.5" to 2.00" depth .956". Base end machined to depth of 1.044" x 1.19" diameter, O.D. of forward end threaded. Four slots milled and equally spaced at base end. Material, aluminum alloy, rod, extruded 7075-T6, ASTM Spec. B221, tight angular and datum position tolerances must be met, final protective finish No. 7.2.1 of MIL-STD-171. Rubber obturator to be assembled to base end of metal part. Sabot, 7.11" long x 3.895" diameter at nose to 4.205" diameter at base. I.D. machined at various dimensions from 1.597" to approx. 3.002", interior and exterior of base end threaded, grooves cut on O.D. of nose end, three slots equally spaced, machined at nose end. Material, magnesium alloy, AZ 61A, ASTM Spec. B107. Absolute temperature controls in machining important. Surface treatment and painting requires a high degree of control. Yield strength of metal, 24,000 PSI minimum, tensile strength, 39,000 PSI minimum, elongation 9% minimum, band centering, material nylon, Type I, Spec. MIL-P-17091 must be assembled to sabot. Band, rotating, material, fiber, gray, Grade CH, Form T, Spec MIL-F-1148 must be assembled to sabot. Sheath Rear, 4.07" long x 2.4" diameter at forward end x 1.05" diameter at rear end, inside dimensions machined from 2.18" to 1.744", depth 2.85", interior of forward end threaded, interior of

rear end machined to a depth of .875", I.D. .770", interior of rear end threaded, material, alloy steel bar, hot-rolled, 4140, ASTM Spec. A322, alternate material, alloy steel bar, cold finished, 3140, 4140, or 4340, ASTM, Spec A331. Close control of heat treat and exceptionally effective threading set up must be maintained. Sheath forward, 7.25" long x 2.7050" diameter at base, conical shaped. Inside dimensions machined at variable dimensions from 1.75" at base to .5000" at nose, depth 6.74", base exterior threaded, material, alloy rod extruded 7075-T6, ASTM Spec B221, alternate material, aluminum alloy die forging, 7075-T6, ASTM Spec. B247. Concentricity is very restrictive on this part. Protective finish, Finish No. 7.2.2 of MIL-STD-171, color black. Core, 5.789" long x 1.75" diameter and tapered to a sharp point. Material, sintered tungsten carbide 8% tungsten carbide minimum and 11 to 13 parts by weight of cobalt. Plug, .24" long x approx. .83" diameter, interior drilled and machined to a depth of .24" x 5/16" diameter, 2 wrench holes drilled in base of plug 7/64" diameter, depth .115" base counterbored for disc, which is cemented to plug. Material of plug, steel, bar, ASTM Spec A107 or A108, Yield Strength, 50,000 PSI, elongations 10%. Material of disc, brass, strip, alloy No. 6, ASTM Spec. B36. Plug and disc assembly to be packaged separately and shipped. Component parts must be assembled. Tracer cavity must have desiccant bags inserted and cavity sealed with tape, packaged in accordance with applicable drawings. Prior to assembly, component parts must be clean and dry, fixturing and methods of assembly must be ideal to reduce scrap rate. Manufacturing firms bidding this item will require a technical staff of engineers, metallurgists and tool engineers. This item is extremely difficult to produce in accordance with applicable specifications.

10640. PROJECTILE, 105MM, M1, HE, METAL PARTS

Consisting of three components. Body Shell 15.7" long, O.D. at base 3.52" below rotating band groove 4.128" O.D. 4.10" O.D. of body, 4.128" at bourrelet and tapered to 2.38" O.D. at the nose. 3.05" up from base of projectile a groove is machined and knurled for rotating band. Nose of projectile has interior threads 1.39" minimum full thread. Exterior of nose end has five staking notches equally spaced, .06" depth x .08" diameter. Material: forging steel, spec. MIL-F-13854, alternative when shell is manufactured by cold extrusion process use spec. MIL-S-11310, steel, bars for cold shaping. When produced by cold extrusion, use spec., RP-PD-96. When produced by hot cup, cold draw process, WD SS-2a, Spec. MIL-S-10520, shall not be used. Yield strength .1%, 65,000 PSI, elongation 15%. Spec. MIL-F-13854 not applicable when produced by cold shaping and only to the forged cup when produced by hot cup cold draw process. Rotating band 4.16" I.D., .197" thick x .865" wide, assembled to projectile cold. Material: Gilding metal spec. MIL-B-20292 or Sintered Iron, Class 4, Spec. MIL-R-11073. Cover base 3.01" diameter x .0310" thick material: Steel, strip,



**IO5 MM CARTRIDGE, HE, M1**



DR. W. H. C. ...

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FS1009 temper No. 4, finish No. 1. A satisfactory passing of a ballistic test is a requirement for the acceptance of each lot of projectiles from the metal parts manufacturer.

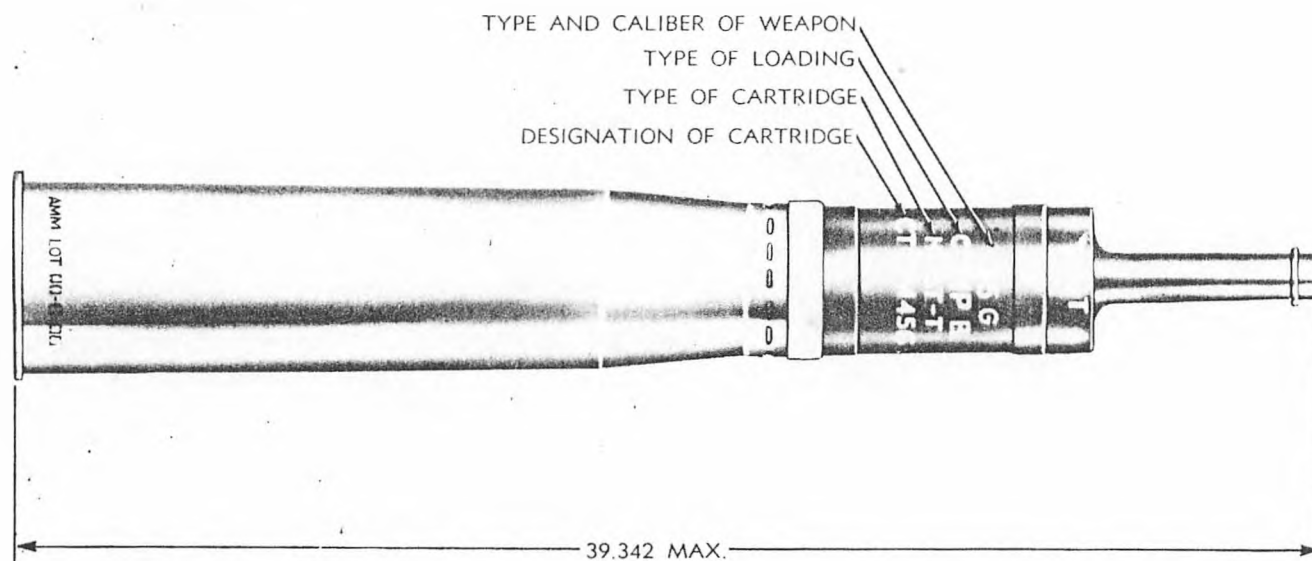
08325. PROJECTILE, 105MM, HEAT, M456E1

Is 4 1/8" diameter x 25 1/2" long, consists of (20) component parts. Major components, Body, 4.128" diameter x 8.09" long x approx. 4 1/2" I.D. with counterbores and inside threads each end, material, steel, alloy, semi-finished, ASTM Spec. A274 or steel alloy bar, ASTM Spec A322 or steel tubing alloy seamless, Spec. QQ-T-00825, or steel carbon, C1041, ASTM A107, minimum mechanical properties 118,000 PSI, Yield Strength, 10% elongation, .1% offset. Spike, 7.63" long x 4.11" diameter, head, 1.79" long, Stem section, 5.84" long, O.D. tapered from 1.35" to 1.18" x 1" I.D., head section bellmouth to 3.39" with external thread both ends with counterbores, grooves, and slots, material, steel, alloy, semi-finished, ASTM Spec A274 or steel alloy bar, ASTM A322 or steel 1018B with boron additive, Spec. ASTM A107, minimum mechanical properties 110,000 PSI, Yield Strength, 10% elongation, .1% offset and 90,000 PSI Yield Strength in ball section. Chamber, 4.11" diameter x 3.675" long x 1.26" bore, counterbore and thread one end 2-3/4" 16 thread O.D. opposite end, material, aluminum alloy, ASTM Spec. B211 or B221 or aluminum alloy die forging, ASTM B247, minimum mechanical properties 65,000 PSI, Yield Strength, 7% elongation, Fin, 3.69" long x 4.08" diameter, (6) webs with "T" shape lugs, center section, 1.37" diameter, counterbores and internal threads both ends, material, aluminum alloy extrusion ASTM B221, minimum mechanical properties 60,000 PSI Yield Strength with 7% elongation, Boom, 6.23" long x 3.08" I.D. tapered to 1.44" small end, external threads both ends, material aluminum alloy ASTM Spec B211 or B221 or aluminum die forging, ASTM B247, minimum mechanical properties 65,000 PSI, Yield Strength with percent elongation, Cone, "Funnel Shape", 3.45" long x 3.75" diameter tapered to .62" diameter x .109" wall thickness, material, copper strip or sheet, cold-rolled, deep drawing, Spec QQ-C-576, manufacturing process that must be used, flow-turn, rotary extrusion, shear form or hydro-spin, other components consists of conduits, plugs, obturator, disc, lock ring, "O" rings, gaskets, insulators, insulated wire plastic cap, etc., various rigid tests required such as sir test, salt spray, hardness, X-ray diffraction for cone and magnetic particle on body. Manufacturing firms producing this item will require a technical staff of engineers, metallurgists and tool engineers. This item is considered extremely difficult to produce according to applicable specifications.

08345. PROJECTILE, 105MM, XM416

15.843" long x 4.128" diameter, 6 components, body, 15.843" long x 4.128" O.D., one piece design, varying wall thickness from approx.

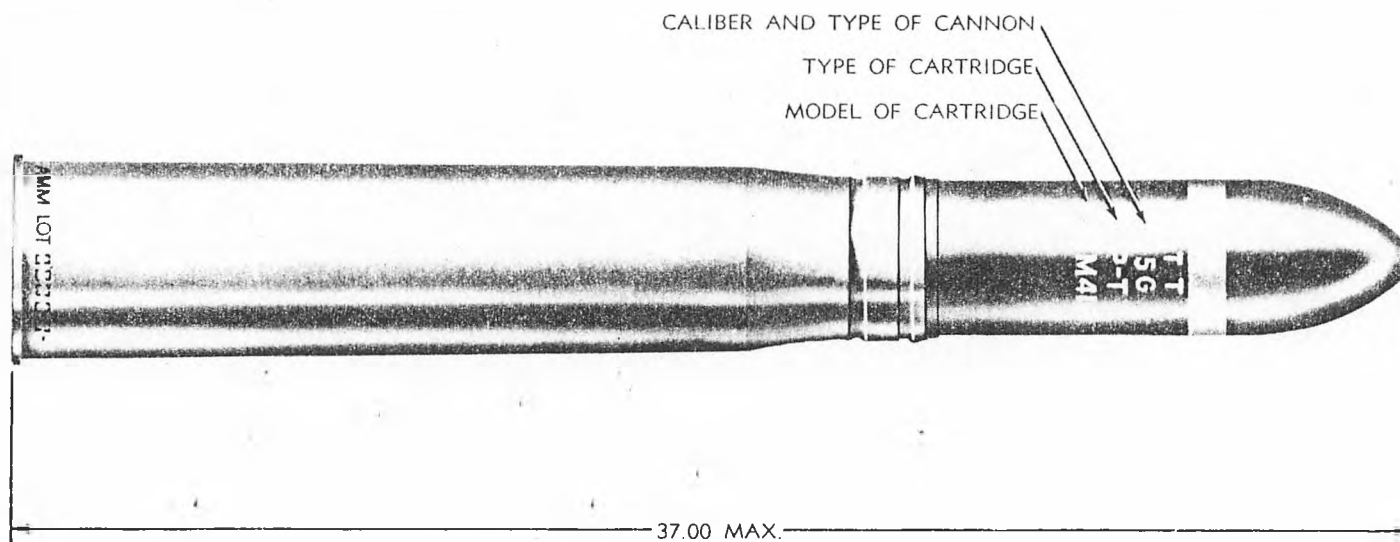




CARTRIDGE, 105mm, HEAT-T, M456

ORD D1694





ORD D1695

CARTRIDGE, 105mm, WP-T, M416



.30" to .135", parabola shaped nose, (2) rotating band grooves, counterbore and threaded base end, material, steel, carbon, ASTM-A107-58T, mechanical properties, YS, 75,000 PSI, EL 10%, Rotating band blank, (2) 4.14" I.D. x .24" wall thickness x .775" Long, material gilding metal, spec. MIL-B-20292, body and two rotating band assembly must withstand an internal hydrostatic pressure test of 6000 plus/minus 200 PSI for 60 seconds minimum. Plug base, 1.68" long x 3.25" O.D. thread x 1.8" I.D. thread, material, aluminum alloy, 2024-T4, Spec. QQ-A-267 or QQ-A-268 or alternate material, aluminum alloy, 6066-T6, Spec. MIL-A-25493, protective finish anodic film, finish number 7.2.1 of MIL-STD-171 requirements of spec. MIL-A-8625, except period of test for salt spray shall be 150 hours. Cup, fuze-well, 3.97" long x 2.04" O.D. with 2.25" O.D. thread open end, wall thickness .16" with .26" base thickness, material, steel, AISI-1141, loaded, protective finish, zinc phosphate, base plug and fuze well cup assembled, with 600 inch pounds minimum torque. Gasket, 2.08" O.D. x 1.81" I.D. x .05" thick, material, copper, strip, CR, Spec. QQ-S-576, soft anneal after forming to Rockwell 15-T scale, 50 minimum. Cup Base, "Cup-Shape", 2.5" I.D. x .032" wall thickness x .32" high, material, brass, Composition 1, 2 or 3 annealed, Spec. QQ-B-626, alternate material, copper, strip, cold-rolled, soft annealed, Spec. QQ-C-576 or beryllium copper strip, Condition A, Spec. QQ-C-533. Plug and cup assembly, base cap, gasket and body assembly will be shipped separately. Contractor shall provide and maintain an effective quality assurance system required by Spec. MIL-I-45208.

08330. PROJECTILE, 105MM, HEP-T, M393A2, METAL PARTS ASSEMBLED

It is 15.84" long 4.126" diameter, consists of 3 components, body 15.34" long, 4.123" diameter, varying wall thickness .30" to .135" parabola shaped nose, 2 rotating band grooves, counterbore and threaded base end, material: steel, carbon, ASTM A107-58T. Rotating band 2 each, 4.14" I.D., .240" thick .775" wide material, gilding metal, Spec. MIL-B-20292. Plug base 3" long, 4.06" diameter of shoulder, 2 wrench holes in base, one end threaded, material: aluminum alloy, 2024-T4 or 2024-T3510, Spec. QQ-A-267 or aluminum alloy, 6066-T6 or 6066T351 MIL-A-25493. This projectile is considered very difficult to manufacture, firms bidding this item will require a highly qualified staff of engineers and tool designers to produce and meet specifications.

09842. PROJECTILE, 105MM, TP-T, M489, METAL PARTS

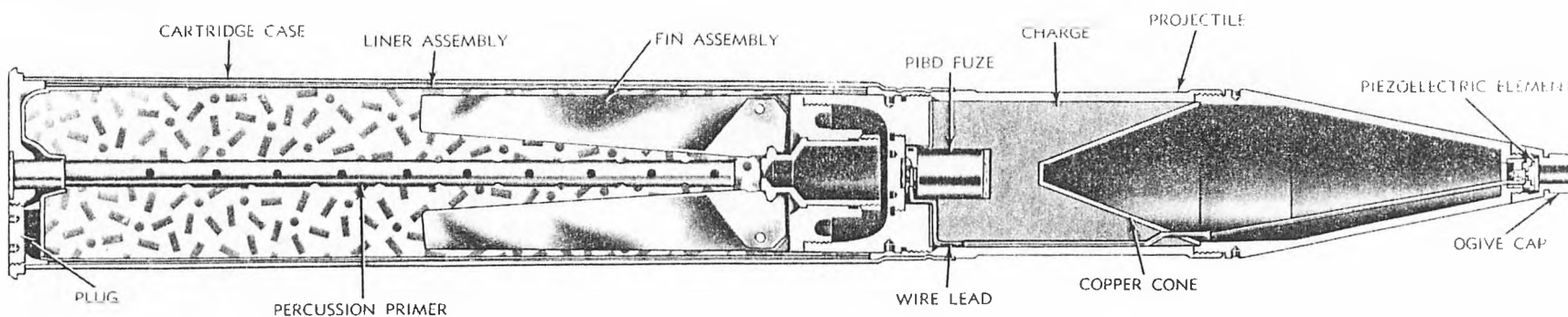
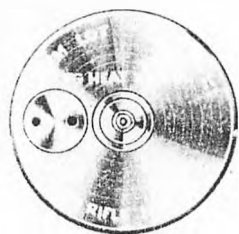
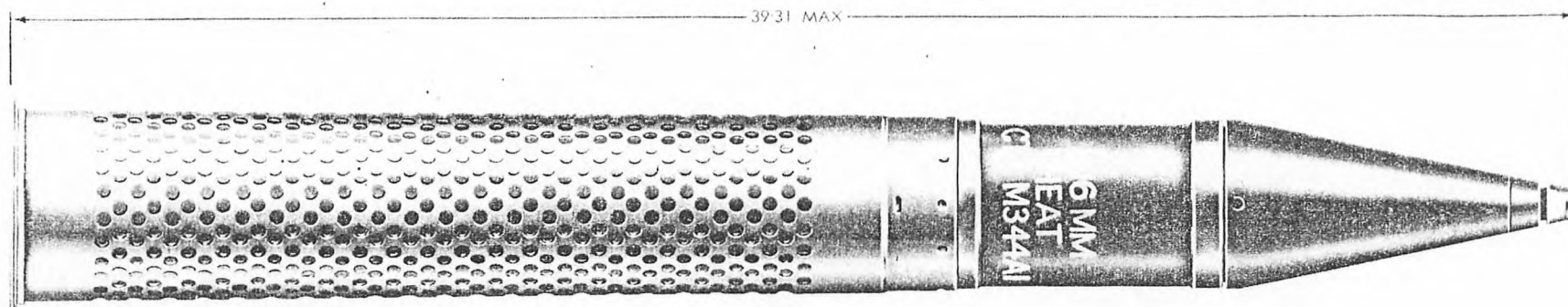
25.88" maximum length x 4.13" maximum O.D., (8) components, Fin, 3.69" long x 4.08" diameter, (6) webs with "T" shape lugs, thread both ends, center section .95" O.D., material, Aluminum alloy 7075-T6, Spec. QQ-A-277 or Aluminum alloy 2014-T6, Spec QQ-A-261, Base, 9.33" long x 4.11" O.D. tapered to 1.44" thread both ends, .995" I.D. x 2 1/2" deep center hole drilled in large end, material, Aluminum



alloy forging 6061-T6 or Aluminum alloy 6061-T6 or Aluminum alloy 6062-T6, Obturator, 4.29" O.D. tapered to 4.26 datum diameter x 3.59" I.D. x .70" wide, material, Zytel 101, molding compound or nylon compound equivalent acceptable evaluation by Army Engineering Agency, Body, 8.09" long x 4.128" O.D. x approx. 4.1" tapered I.D., thread both ends, material, steel, forging, Spec. QQ-S-633 and MIL-S-13048 or Steel tubing, type I, Spec. QQ-S-00629 or Steel tubing, seamless, Spec. QQ-T-830 or Steel, Spec. MIL-S-11310, Spike, 88.04" long x 4.11" O.D., 4.11" OD head section x 2.14" long, body section 1.185" O.D. x 5.9" long, external thread both ends, material, Aluminum alloy forging, 6061-T6 Spec. QQ-A-267 or Aluminum alloy 6061-T6, Spec. QQ-A-325 or Aluminum alloy 6061-T6 or 6062-T6, Spec. QQ-A-270, Cap, Nose, flange, 1.57" O.D. x 1/8" wide, body, 1.17" O.D. x .67" long 3/4" x 5/8" deep internal thread one end, material, Aluminum alloy 6061 or 6062-T6, Spec. QQ-A-270 or Aluminum alloy 6061-T6, Spec. QQ-A-325 or Aluminum alloy 2014-T6 Spec's QQ-A-261 or QQ-A-266 or Aluminum alloy 2024-T4 Spec's QQ-A-267 or QQ-A-268 or Aluminum alloy, impact extrusion 6061-T6 or 2014-T6, Spec MIL-A-12545, Plug and Disc Assembly (2) components Plug, 7/8" O.D. thread x .34" long, 5/16" bore, .44" center bore, with (2) 7/64 x 1/8" holes in base, material, Aluminum alloy 2024-T4, Spec. QQ-A-267 or QQ-A-268, Disc, .435" O.D. x .004" thick, material, Brass, Comp. 2, Spec. QQ-B-613, disk crimped 360 degrees and sealed into plug with adhesive. Plug and disc assembly is shipped separately. Projectile MPTS Assemblies are palletized for shipment. Contractor shall provide and maintain an effective quality assurance system in accordance with Spec. MIL-I-45208. Manufacturing firms bidding on this item will require a highly competent technical staff of engineers, metallurgists, chemists and tool design engineers to design, fabricate and maintain precision tools required for mass production of this item. This shell is considered very difficult to produce to applicable specifications.

08395. PROJECTILE, 106MM, HEAT, M344A1 WITH M8 FIN, METAL PARTS

Projectile Assembly, 16.43" long x 4.128" in diameter, consists of 10 component parts. The major components are Body, 7.63" long x 4.128" O.D., 3.555" I.D., counterbored and internally threaded on both ends, 2 bourrelets and an annular groove on the O.D. material, steel, tubing, seamless, Spec. QQ-T-830 or steel, forging, Special Bar Quality, Specification ASTM-A107. Ogive, 8.116" long, hollow truncated cone with a 4.11" O.D. tapering to 1.3713" on the opposite end, .144" wall thickness, external threads on both ends, material, steel, forging, Special Bar Quality, Spec. ASTM-A107 or steel, cold extrusion, Spec. MIL-S-11310. Cone, 3.819" long, hollow truncated cone, closed on the small end, 3.564" O.D. tapering to approx. .616" on the opposite end, .10" wall thickness, material, copper, strip, cold rolled, deep drawing annealed, Spec. QQ-C-576. Chamber, 3.10" long x 3.9838" O.D., external thread on one end, internal thread on one end,





internal thread on other end followed by a radius, a reverse angle taper, a 1-7/8" thread, a counterbore and a 1.264" through hole with 4 equally spaced longitudinal slots on the circumference, material, aluminum alloy, forging, Spec. QQ-A-367 or aluminum alloy, Spec. QQ-A-200/3A or QQ-A-225/6A. Plug, .39" long x 1.873" O.D., 1-7/8 external thread, 2 blind holes 180 degrees apart on the base, one blind hole on the longitudinal axis at the opposite end, material, aluminum alloy, Spec. QQ-A-200/3A or QQ-A-225/6A. Other parts consist of a polyamide insulator and conduit, brass eyelet, stainless steel wire with polyamide insulation, wire terminal and a carbon steel ogive cap. Fin assembly, 11.22" long x 3.938" in diameter, consisting of 16 component parts, the major components are Fin (6 each), 8.93" long, varying in depth from 1.544" at the base to .929" at outer extremity, .040" thick at top to .260" at the bottom, .25" hole through base with a full depth involute spur gear tooth space on outside radius at bottom of base, material, aluminum, forging, Spec. QQ-A-367. Housing, 2.91" long x 3.938" O.D. 1.687" I.D., 6 pair of lugs on one end with .25" hole through each, other end counterbored with a .030" x .06" shear ring remaining on the circumference, 3.5" threaded on the O.D., material, aluminum forging, Spec. QQ-A-367 or aluminum alloy, Spec. QQ-A-200/3A or QQ-A-225/6A. Piston, 2.93" long x 1.88" in diameter, 1.38" internal diameter on large end necked down in 2 steps to a .196 internal diameter on the small end, 1.625" thread on large outside diameter, circumferential rack gear tooth on opposite end, material, steel, carbon, bar, cold finished, Spec. ASTM-A108. Stop, Piston, .51" long x 1.824" O.D. and 1.625" thread on the I.D., undercut and taper on O.D., material, steel, carbon, bar, cold finished, 1137 or 1117, Spec. ASTM-A108 or steel, tube, seamless CDSR, MT1020 to 1035 Spec. QQ-T-830, other parts are pins (6 each) and an "O" ring. This item must withstand vigorous ballistic tests for such characteristics as security of metal parts, fin opening and penetration. Manufacturing firms producing this item will require a competent staff of engineers, metallurgists and tool designer. The item is considered extremely difficult to produce in accordance with applicable specifications.

01220. PROJECTILE, 106MM, HEP-T, M346A1, METAL PARTS

Approx. 15.1" long x 4.128" O.D. The component parts are: Body, approx. 15.1" long x 4.12" O.D., one piece design, varying wall thickness, paraboloid shaped nose, with rotating band grooves, counterbore and threaded base end, material, carbon steel, non-resulphurized, spec. ASTM 107. Rotating Band, approx. .035" thick overlay weld by inert gas shielded method, material, copper, RCU-1, Spec. QQ-R-5/1. Index Buttons, approx. .20" diameter x .09" thick, material, carbon steel, ASTM A108. Protector cap minor part, material, plastic, type I size 55 Spec. MIL-C-52078. Manufacturers bidding this item should have a highly competent technical staff of engineers, metallurgists, chemists and tool design engineers.



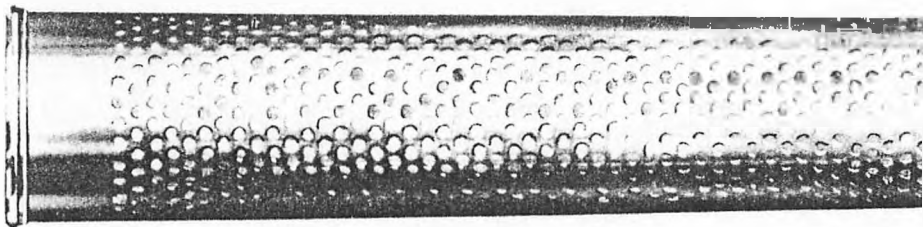


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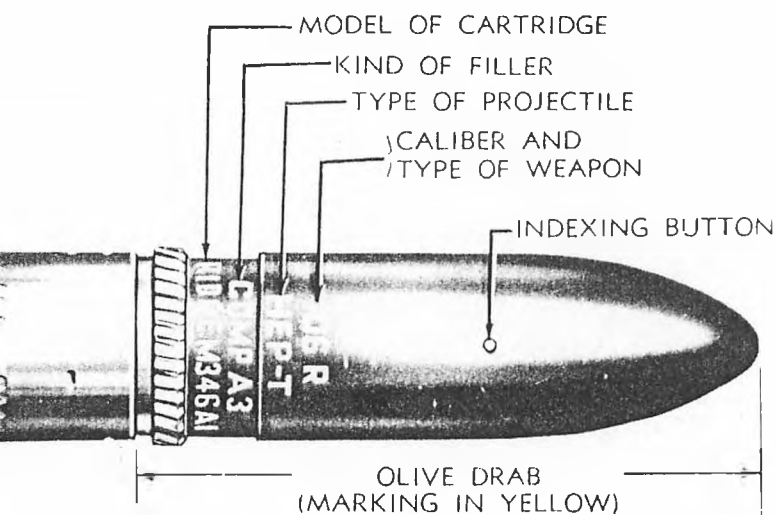
MODEL OF CARTRIDGE (IN WHITE)

MODEL OF WEAPON (IN WHITE)

83a



38.10 MAX



RA PD 213042C





08490. PROJECTILE, 120MM, HE-T, M356, METAL PARTS

Consists of four parts, approx. 20" long x 4.693" O.D. Body from base to nose of shell 19.38" long with a .86" extension at base for tracer assembly. O.D. from base to nose approx. 4.67" to 4.693" and tapered to 2.38" nose end internally threaded to a depth of 1.60", 1.39" minimum effective thread, wall thickness .055" to .48" minimum, extension at base end drilled and tapped. Circumference of base is machined and scored for two rotating bands. Material: steel, ASTM, Spec. 273 or special bar quality, ASTM Spec. A107. Alternative Material: steel Spec. MIL-S-11310, to be used when made by cold shaping. Mechanical properties 75,000 PSI YS 1% offset 15% elongation. Blank rotating bands forward band I.D. 4.713" x .955" high x .358" thick rear band I.D. 4.713" x .490" thick x .875" high, material on both bands, gilding metal tubing, Spec. MIL-B-20292. Cap Protector O.D. at flange 2-3/8" approx. 5/8" high. Material plastic, type 1, spec MIL-C-52078. Firms bidding this item must have an engineering staff of metallurgists, chemists and tool designers to meet the applicable Government Specs. This item is considered extremely difficult to manufacture.

10392. PROJECTILE, 152MM, HEAT-T-MP, XM409E1

Consists of 8 major components. Body 5.99" diameter x 10" length by 5.1" I.D. x 7.87" deep, smaller base 2.375" diameter x 5.74" counter-base 1.19" deep threaded inside and outside each end. Band groove on outside material, steel, forging AISI 52.00 steel 1.00% minimum carbon. Ring Locking 5.5" diameter x 1.5" length x 4.7" I.D. Threaded on O.D., material, steel, tubing seamless, spec. QQ-T-803 or steel tubing FS-1055. Adapter Fuze 3" diameter x 1.1/8" length, counter, thread one end 2.375" thread opposite end material aluminum alloy 7075-T6 Spec. QQ-A-277 Windshield 5.99" diameter taper to approx. 2" diameter at small end x 6.5" long with approx. 3/16" wall thickness material steel. Cap, Windshield 2.26" diameter tapered to 1.225" opposite end by 1.947" length counterbases in inside diameter, material aluminum alloy 7075-T6 Spec. QQ-A-277 liner, smooth 60 degree approx. 5.4" diameter x .175" wall thickness by 4.421" length copper sheet Spec. QQ-C-576, Rotating Band Blank 6.033" I.D. x .828" length with .252" thick wall. Material, sintered iron Class 2 Spec. WW-T-785 spacer 2.375" diameter x .36 thick threaded O.D., material aluminum alloy 7075-T6 Spec. QQ-A-277. Complete assembly also consists of smaller-components. Dummy Fuze, insulators, wire and eyelet to produce to meet applicable specifications.

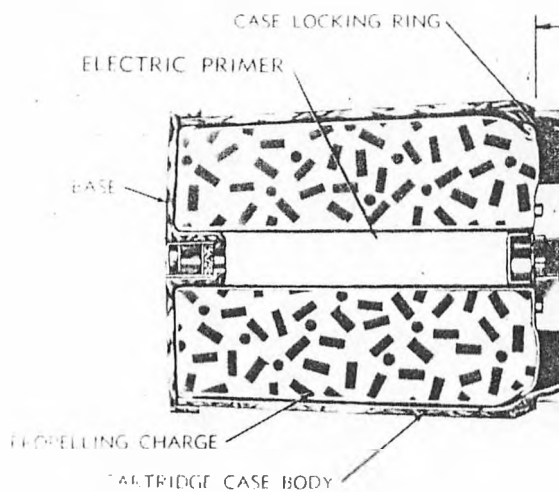
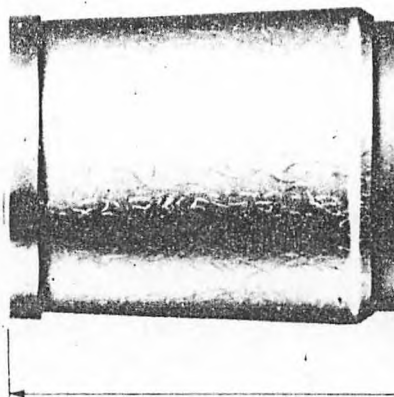
10598. PROJECTILE, 152MM, WP, XM410, METAL PARTS ASSEMBLY

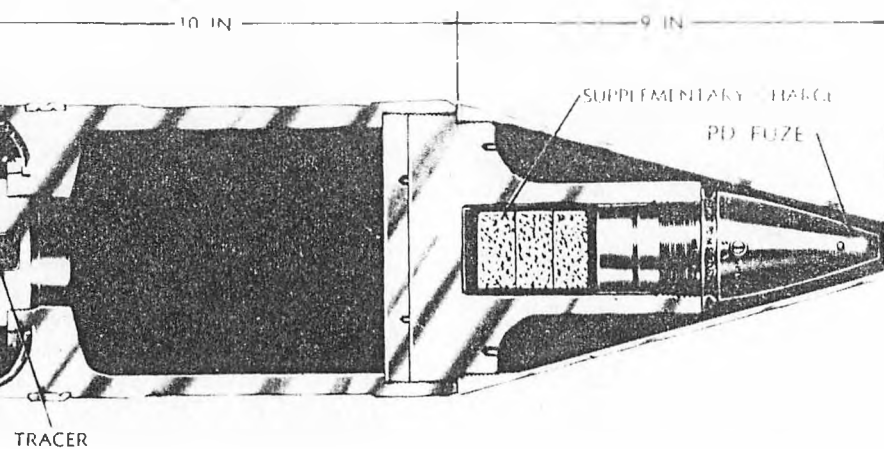
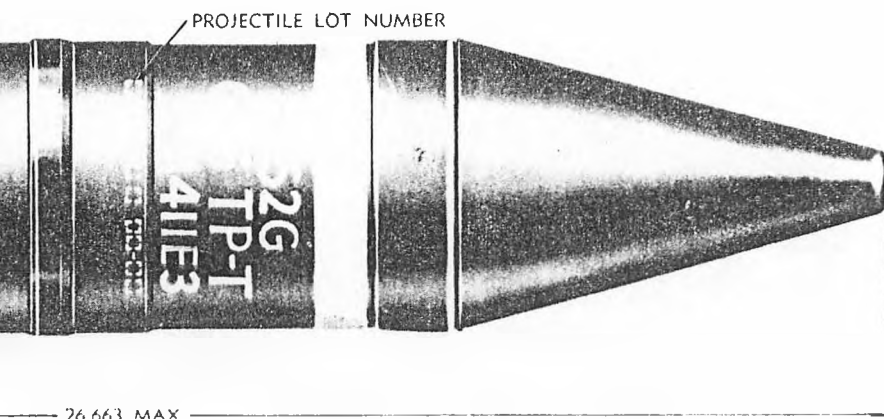
It is 16.965" long x 5.993" diameter. The assembly consists of 4 parts. Body. The body is cup shaped 11.62" long x 5.993" diameter. The open top is tapered to 4.174" diameter and has 3.75" diameter internal

threads. The wall thickness is .300". Has a banding groove. Bottom of base is counterbored and has 3.25" external thread. Material: Carbon steel WD-SS-7, Spec. MIL-S-10520 Cannister consists of 2 parts welded together. Bottom is cup shaped 3.62" in diameter x approx. 8" long with wall thickness of .27". Top is 4.174" in diameter x 2.84" long. Has 3 external threads; one .75" hole, counterbored 2.10" x 2.26" deep with internal thread. Material: Aluminum alloy 6061-T6 Ogive cone shaped nose is 4.63" long x 3.7" diameter at base and 1.2" diameter at top. Base has 3.02" diameter internal thread. Has a side wall and nose thickness of .04" material aluminum alloy 2024 bar, temper T4, Spec. QQ-A-00200/3. Locking Ring 3.85" O.D. x 3.25" I.D. x .31" long. Has internal thread. Material: Aluminum alloy 7075-T6 ASTM Spec. B221.

10390. PROJECTILE; 152MM, TP-T, XM411, METAL PARTS ASSEMBLY

15.07" long x 5.995" in diameter. It consists of 4 parts and 1 sub-assembly as follows: Body and Band Assembly, the body is 10.02" long x 5.993" in diameter with sidewall thickness of .418", it has 5-1/2-12UN-2B internal threads on open end, 2-3/8-16UN-3B-LH internal threads in base end. The band seat is .853" wide x .138" deep. Body material is alloy steel for forging, ASTM, Spec. A274 or steel alloy, hot-rolled bar, ASTM, Spec. A322. The rotating band is 6.033" inside diameter x .828" wide x .252" thick, material is sintered iron, class 4, Spec. MIL-R-11073, Spike, length 6.05", large diameter is 5.38" with neck reduced to 2.745" O.D. and formed cavity 4.916" deep x 1.81" I.D. There is a 5-1/2-12UN-2A thread on the shoulder and a 200-UNS-1B internal thread at open end of cavity, material is aluminum alloy, forging, ASTM, Spec. B247, or aluminum alloy, Bar or Rod, ASTM, Spec. B221 or B211, Windshield, a tapered cone 8.93" long with large diameter of 5.99" and small diameter of 1.206" with wall thickness of .125", material, steel, special bar, quality, Spec. ASTM-A-107 or carbon steel, plate, Spec. QQ-S-535, Plate, approx. 5-1/2" diameter disc x .63" thick 5-1/2-12UN-2A thread on outer diameter, two 1/4" work holes 2.87" apart drilled to 3/16" depth on one face, material, steel, bar, special quality, ASTM, Spec. A107 or steel cold finish, ASTM, Spec. A108 or steel carbon, plate, Spec. QQ-S-635, Adapter, Tracer, 3.000" diameter with step out to 2.247" diameter x 1.18" thick, cavity in center, .770" diameter x 9.27" deep, 2-3/8-16UN-2A thread on step diameter, 2 work holes 5/16" diameter x 7/32" deep, spaced 2.00" apart, material, aluminum alloy, bar or rod, ASTM, Spec. B211 or B221 or aluminum alloy forging, ASTM, Spec. B247, protective finish, Finish Number 7.2.1 of MIL-STD-171, dechromate seal in accordance with table III of Spec. MIL-A-8625. This projectile assembly is difficult to manufacture due to tight tolerances and concentricities required. Firms bidding this item must have a staff of metallurgists, and chemical engineers and tool designers to fabricate this projectile to meet Government specifications.





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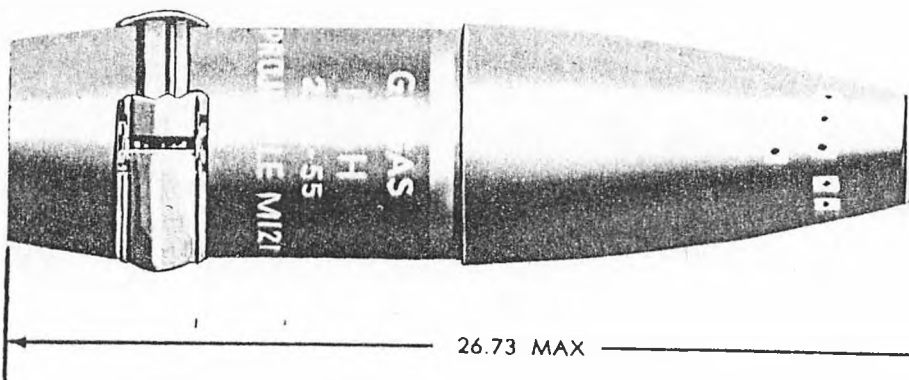
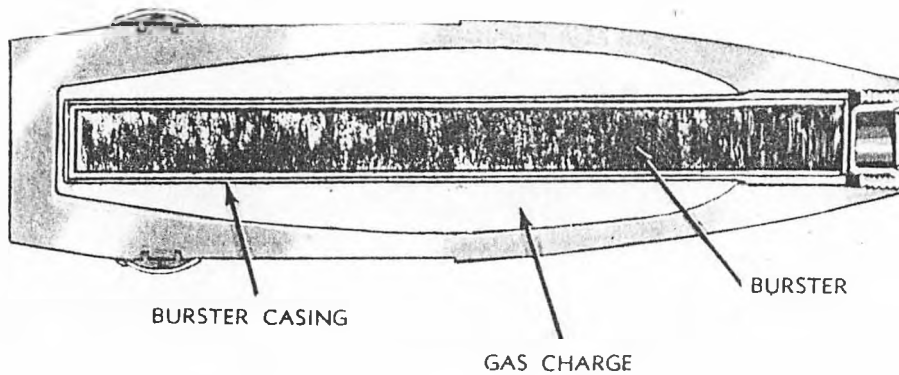
10580. PROJECTILE, 155MM, CHEMICAL, M121E1, METAL PARTS ASSEMBLY

Consist of six components, Body, approx. 23.75" Long x 6" diameter, nose section threaded and precision finished within 16 to 32 micro-inches, material, steel, ASTM-A273 or MIL-S-11310, Adapter, Fuze, 2.88" diameter x 2.23" length x 1.909" I.D., external and internal threads, material, steel, ASTM-A107 special bar quality or steel tubing, Spec. QQ-T-830, Rotating Band, 6.36" diameter x 6.09" I.D. x 1.075" wide, material, gilding metal, Spec. MIL-B-20292 or MIL-B-20295, Gasket, 2.19" diameter x 1.84" I.D. x .125" thick, material, rubber, neoprene, Type S, Class SC, Grade SC515, Spec. MIL-R-3065, VCI Paper, approx. 20" square, material volatile corrosion inhibitor paper, Type I, Class 3, Style C, Spec. MIL-P-3420, Gasket, Shipping 2.83" diameter x 2.5" I.D. x .13" thick, material rubber, Spec. MIL-R-3065, Type S, Class SC, Grade SC820 A, B, as specified in MIL-STD-417. Magnetic particle inspection in the nose section of each projectile required. Each projectile must withstand a helium gas test. Exterior is surrounded with one atmosphere of helium, a maximum of 20 microns of mercury absolute pressure. Maximum leak permitted is  $1 \times 10^{-6}$  to the minus 6, centimeters per second. Projectiles are packaged on wood pallets for shipment. This item is considered very difficult to produce to specification requirements.

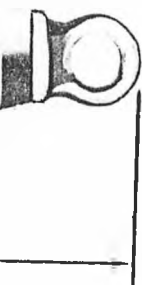
10637. PROJECTILES, 4.2 INCH, WP, SMOKE, M328A1

The projectile is made up of basically 6 components. Body, the prime component, is approx. 16" long and is made of steel, non-resulphurized, special bar quality, Spec. ASTM A107. The body is tubular in shape with a closed end actually forming the base, with a diameter of approx. 4.2". The base of the body has a protruded, threaded boss approx. 1" in diameter, 1/2" long, the body indicates a forging process. The Vane is a metal Stamping, approximately 13-1/4" long, and 1/16" thick, made up of steel strip, cold-rolled temper number 4, finish number 1 ASTM Spec A109. The stamping consists of 16 holes and notches and the center section forms a circular holder for a burster casing. The ends of the short dimension of the stamping are formed in an "S" pattern. The nose adapter is of the same material as the body and is forged in a funnel type shape with a length of approx. 2" and a maximum diameter of 2-7/8". It is threaded on the large diameter bore and there are several machine steps internally with a minimum wall thickness of 1/4". The Burster Case is approx. 13-3/4" long x maximum diameter of 1-3/16", minimum diameter of 7/8". The material used is steel bar, cold-finished, non-resulphurized, ASTM Spec A108 with several alternates allowing steel carbon plate, steel sheet and strip, and steel tubing, seamless. Alternate materials require silver brazing. This component is considered difficult to produce to specifications. The assembly of the metal parts components consists of inserting the Vane into the Body then nosing the front of the projectile to dimension. The Nose Adapter is then inserted and brazed. The Burster Casing is shipped









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outside the Body to be press fitted at the loading plant. Two additional components, both Protector Caps, one for the rear to protect the threaded boss and the other for the nose to insure cleanliness and protect the inside nose threads. The material is plastic, type 1 and 3 of MIL-C-52078, approx. 1/32" wall thickness. The usual painting requirements apply and this entire item is considered difficult to manufacture to specifications.

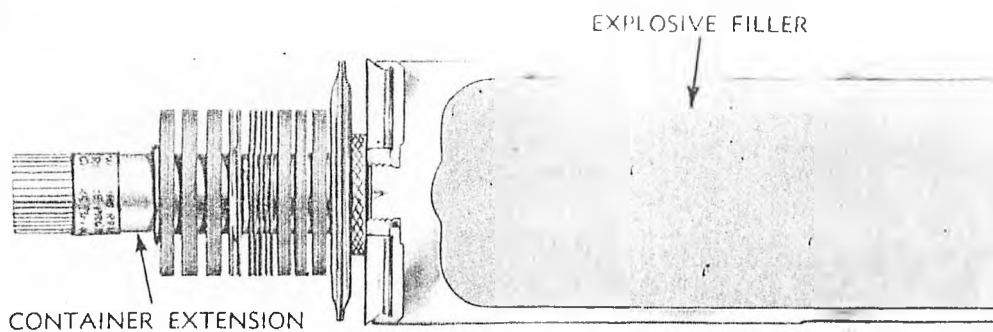
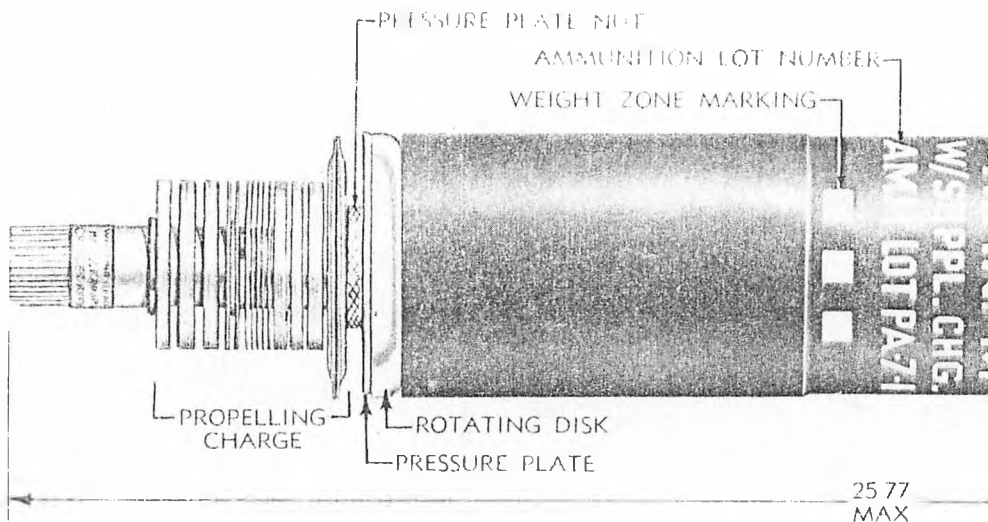
10352. PROJECTILE, 4.2", HE, M329A1

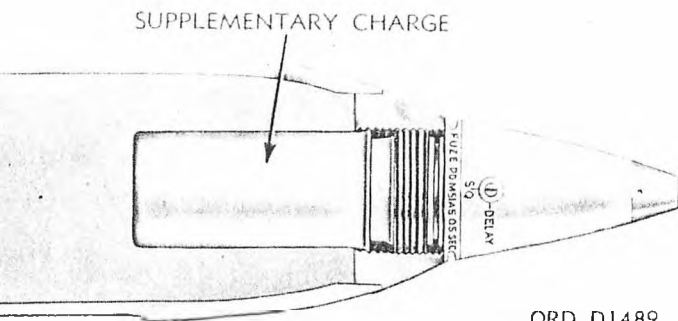
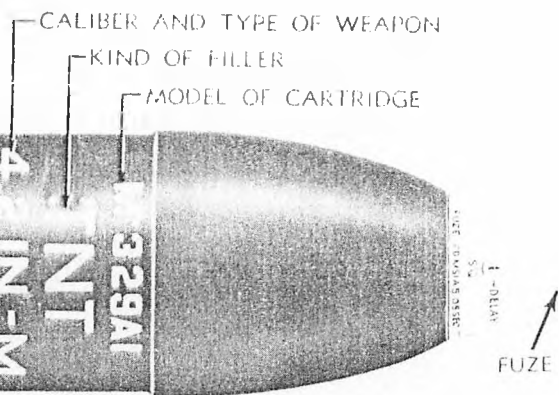
16.395" maximum length x 4.193" maximum O.D., 3 piece design consisting of Body. 14.28" Long x 4.191" maximum O.D., 3.73" I.D. tapers down to a 3.062" nose opening through a 10.218" basic radius, wall thickness in nose area is .23", base is counterbored to 3.750" ID for a depth of .50", material, tube, steel, non-resulphurized, Spec QQ-T-830, Nose, Adapter, 3.215" maximum O.D. x 1.53" long threaded with a 2.0-12NS-1B thread, material, steel, nonresulphurized, ASTM Spec. A107 or A108, Base, 4.165" maximum O.D. x 1.47" long, .9375-14NS-2A, L. H. thread on one end, material, steel, non-resulphurized, ASTM Spec. A107, or steel, cold extruded, Spec. MIL-S-11310, each of the above components must have a minimum yield strength of 45,000 pounds per square inch at .1% offset. The base and nose adapter are brazed 360 degrees to the body with silver brazing alloy the assembly must withstand an internal hydrostatic pressure of 2500 pounds per square inch for 5 seconds followed by an internal air pressure of 150 pounds per square inch for 15 seconds without leaking. The interior and exterior surfaces are cleaned and phosphatized followed by a lacquer primer on the interior and a lusterless enamel or lacquer paint on the exterior, the exterior must withstand a 144 hour salt spray. Two plastic Protector Caps, one for the thread on the base and one for the opening in the nose adapter are also required.

10224. PROJECTILE, 165MM, HEP-T, M123E1, METAL PARTS

Consists of three component parts. Body 23.9" Long x 6.485" diameter w/varying wall thickness from 0.9" to .667" at base end. Base section has internal and external threads, various counterbores, and welded overlay rotating band, material, steel bar, ASTM-107 or steel plate, Spec. MIL-S-3289 or seamless steel tubing, Spec.. QQ-T-830. Plug, Base, 5.44" diameter x 1.105" long, external and internal threads, various counterbores, slots, grooves, material, steel bar or forging ASTM-A-273. Cap, Protector, 6.62" diameter x .875" long x .93" thick, material vinyl plastic. Complete assembly must withstand rigid hydrostatic and air tests. Manufacturing firms bidding this item will require a technical staff of engineers, metallurgists, and tool design engineers. This item is considered extremely difficult to produce in accordance with applicable specifications.







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10731. PROJECTILE, 175MM, HE, M437, METAL PARTS ASSEMBLY

The projectile is approx. 34" long consists of 4 components, Body, 34" long x 6.88" O.D., parabolic shape with tapered base section, 5.5" maximum I.D., tapered wall thickness, serrated rotating band seat, 2" I.D. nose thread, material, steel, ASTM A273-58T sections 1-14, Inc., for Hot Forge and heat-treat method, minimum mechanical properties for base section arc, YS 80,000 PSI, elongation 10% and for sidewall, YS 85,000 PSI elongation 12%, Rotating Band, blank, 6.905" I.D. x 2.48" wide x .48" wall thickness, material, gilding metal, Class B, annealed, Spec. MIL-B-20292. Obturating Band, 6.59" I.D. x .57" wide x .255" wall thickness, material, polyamide molding plastic, composition A, Type 1, Spec. MIL-M-20693 and Base Cover, 4.18" O.D. x .0299" thick, material, steel, strip CR, temp 4, finish 1, ASTM A109, welded 360 degrees to base. Contractor shall provide and maintain an effective quality assurance system in accordance with Spec. MIL-A-2550 and MIL-I-45208. Ballistic test criteria required for acceptance of each lot. Firms bidding on this item will require a highly competent technical staff of engineers, metallurgists, chemists and tool design engineers to design, fabricate and maintain precision tools required for mass production of this projectile. This projectile is considered very difficult to produce to applicable specifications.

09853. PROJECTILE, 8", CHEMICAL, M426

Consists of 6 components, Body, 29.05" long x 7.99" diameter, conventional type shell design, nose section precision finished and threaded, material, steel ASTM-A273 or MIL-S-11310 or MIL-S-10520, 70,000 PSI minimum, Yield Strength, 15% elongation, .1% offset, 30% reduction of area, Shell Body weight approx. 153 lbs., Adapter, Fuze, 3.882" diameter x 3.29" long, 2.65 and 2.375" I.D., 2" 12 thread inside and 3.5" 14 thread on outside, material, steel, special bar quality, ASTM A107 or steel tubing, Spec. QQ-T-830, 50,000 PSI minimum, Yield Strength, 15% elongation, .1% offset, Rotating Band Blank, 8.02" I.D. x 1.97" long x .44" wall thickness, material, Gilding metal, annealed, Spec. MIL-B-20292 or Centrifugal Cast, Spec. MIL-B-20295, Gasket, 2.19" diameter x 1.84" I.D. x .125" wide, material, Rubber, Neoprene, Type S, Class SC, Grade SCb15, Spec. MIL-R-3065. VCI Paper, 26-1/4" long x 8-3/4" wide, material, Volatile Corrosion Inhibitor Paper, Specification MIL-P-3420, Type I, Class e, Style C, Gasket Shipping, 3.852" diameter x 3.507" I.D. x .13" wide, material, Rubber, Spec. MIL-R-3065. The Shell Body nose section requires magnetic particle inspection, also each body assembly must withstand helium gas test after evacuating the air inside to a minimum pressure of 20 microns of mercury absolute pressure. One atmosphere of helium surrounding the exterior maximum leak rate  $1 \times 10^{-6}$  cubic centimeters per second for 5 seconds. This item is considered very difficult to produce in accordance with rigid specifications.



10916. PROJECTILE, 8", HE, M106

Projectile body approx. 32" length x 8" diameter one piece design, assembly consists of (3) components, Body, copper, rotating band and base plate. Body is fabricated by hot-forge heat-treat or hot cup-cold draw process, material Spec. Steel ASTM-A-273 or MIL-S-10520. Base plate is manufactured from approx. .032" thick material steel. Assembled to base of shell by resistance welding assembly is phosphate coated and painted. This item is considered very difficult to manufacture in accordance with applicable specifications.

10946. PROJECTILE, HE, 155MM, M107 METAL PARTS ASSEMBLY

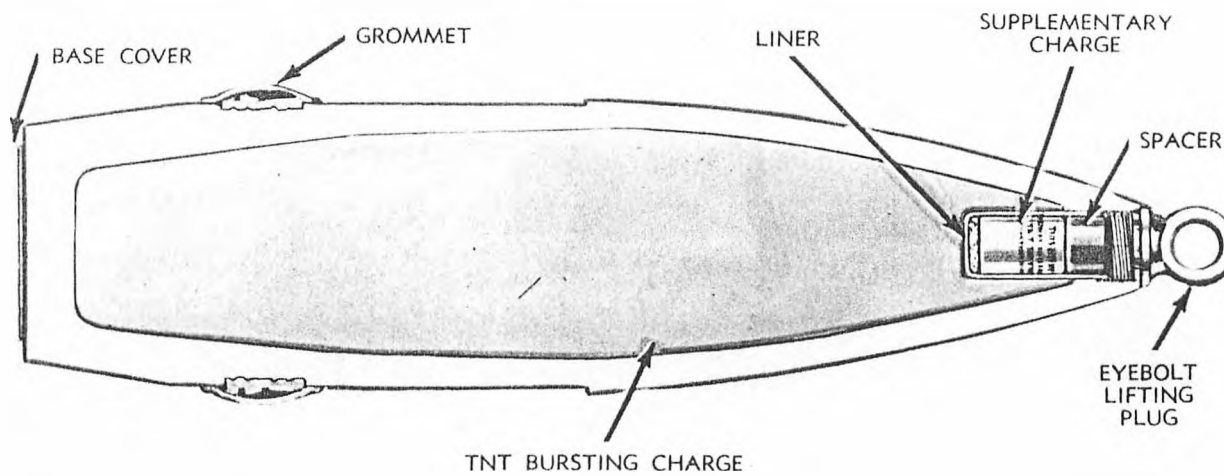
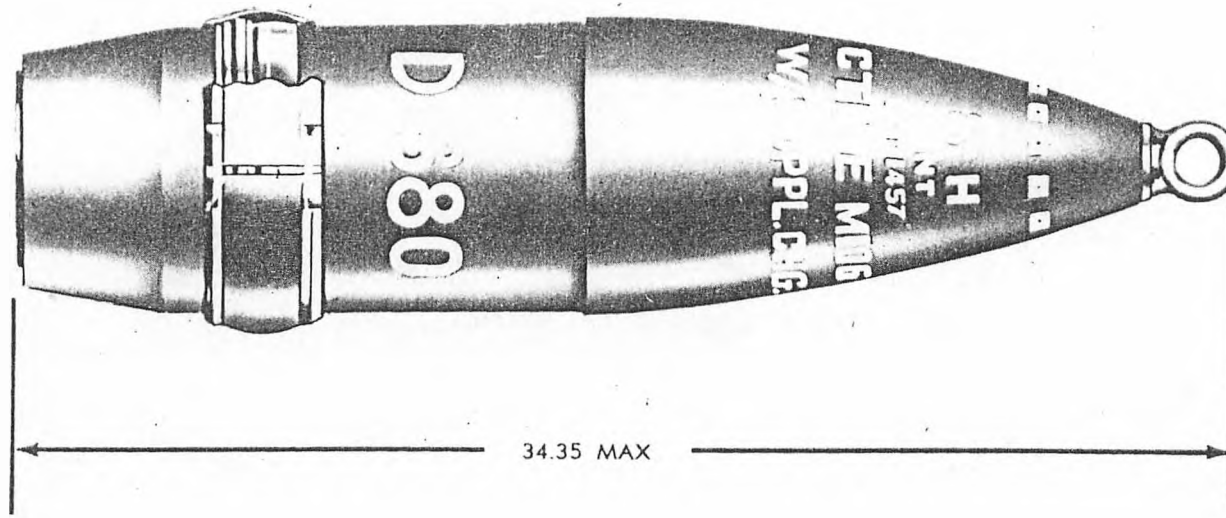
23.8" L x 6.092" D, /3/ components. Body, 23.8" L, threaded nose with rotating band groove, steel forging, material, ASTM-A-273 or MIL-S-10520 for hot cup, cold draw or MIL-S-11310 for cold extrusion. Rotating Band, 6.09" ID x 1.075" W x .275" wall thickness, material, gilding metal annealed, Specification MIL-B-20292 or MIL-B-20295. Cover Base, 4.49" D x .0299" thick, material, steel, Specification ASTM-A109, cold rolled strip, Temper Number 4, finish number 1. Complete assembly is palletized for shipment. This item is considered very difficult to produce.

11111. PROJECTILE, 155MM, SMOKE, WP, M110, MPTS

Three piece design, Body, Adapter and Rotating Band, Body, 6.07" D x 22.84" L, 1.08" D, recess in bottom of cavity, nose has 2.5" D, 12 UN internal thread, material, hot forge, carbon, steel, ASTM-A273, non-resulphurized, or for hot-cup cold draw, specification MIL-S-10520, or cold extrusion, specification MIL-S-11310, 65,000 PSI minimum yield strength, 15% minimum elongation, 30% reduction of area, Adapter approx 3" D x 3.76" L, with outside and inside thread, material, steel carbon, special quality non-resulphurized, ASTM-107 or ASTM-108, Adapter is silver brazed into nose of projectile, Rotating Band, 6.09" inside diameter x 1.075" L x .275" wall thickness, material gilding metal, specification MIL-B-20292 or 20295. This projectile is considered very difficult to produce in accordance with applicable specifications.

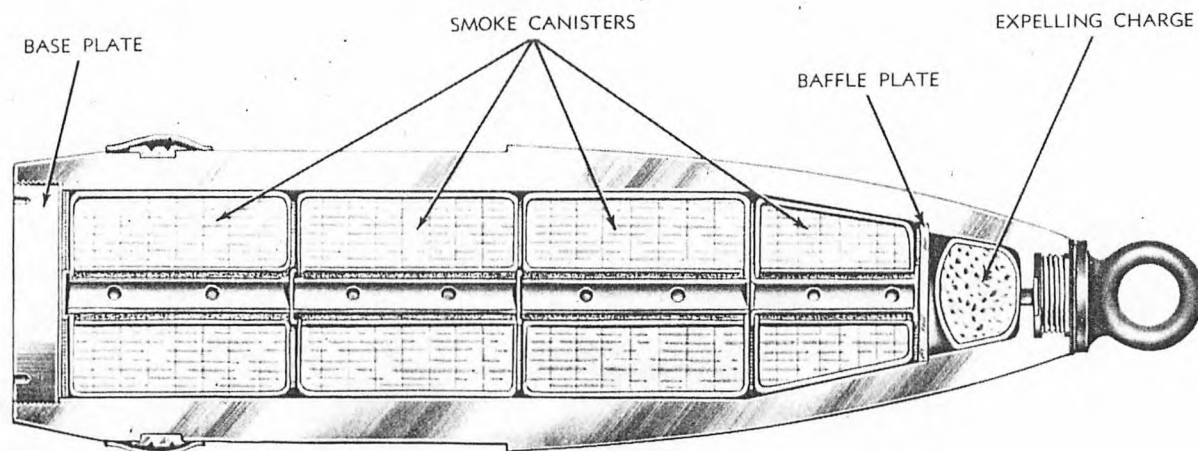
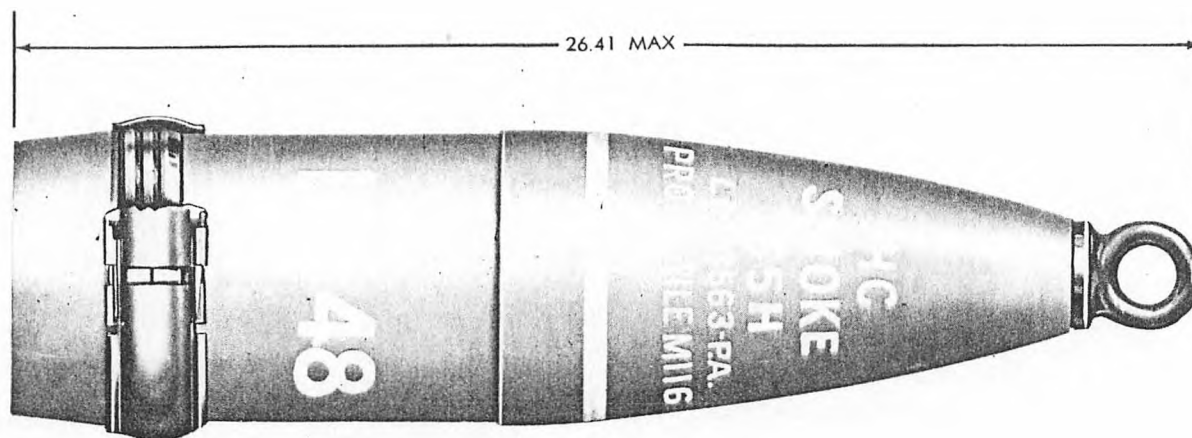
11221. PROJECTILE, 155MM, SMOKE, B, E, M116E2, MPTS

Consists of three components body, rotating band and Base plug, Body 23.57" L x approx 6" D, x 4.52" ID. Base and nose end is threaded. Material carbon steel, specification ASTM-A273 or MIL-S-10520 or MIL-S-11310 or seamless tubing QQ-F830. Rotating Band Blank ID 6.09" x .275 wall thickness x 1.075" L. Material gilding metal MIL-B-20292. Base plug 5" D x 1 1/4" thick, diameter is threaded. Material steel same as body. Assembly is phosphate coated and painted, palletized for shipment. This projectile is considered very difficult to manufacture to applicable specifications.



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ORD D1690



10342. FEEL. WIRE, FIRING 500' WITH CARRYING STRAPS (Ann-11a)

Feel assembly has 4 assemblies. Handle assembly, 10 components: Handle, one "U" shape 7/32" O.D. x approx. 9-15/32" wide with 6-3/4" legs, with 1-5/16" circles at ends of handle. Handle, one, same as above with 10-1/32" width, material for 2 handles, steel, CF, FS-1020, Spec. QQ-S-633. Stop, two, 23/64" long x .171" O.D. material, steel FS-B-1112, Spec. QQ-S-633. Handle pad, one, 7-1/8" long x 3/4" O.D. x 1/4" I.D., material, oak or maple lumber, No. 2, common or plastic. Brace, 8, formed 3/4" radius section x 5/16" wide x .04" thick with curved ends to lock around handle corners, material, steel, HR strip, FS-1020, Spec. QQ-S-640. Alternate brace may be formed and drilled for 8 rivets or may be spot welded in position. Plate, two, 1 1/2" O.D. x .09" thick, material, brass, composition 24, 1/2 hard, Spec. QQ-B-613. Housing, two, 1-11/16" O.D. x .593" long, flange O.D. 1-11/16" body 1.312" O.D. with center hole drilled and counterbored, material, brass composition 24, 1/2 hard, Spec. QQ-B-613, Bearing, two, 1" long x .687" O.D. with .322" square center hole, material, CR, FS, B-1112, Spec. QQ-S-633. Oil hole cover, 2, commercial #520, approved source. Screws, 8 flat head #6, machine, brass, 32 NC-2 x 3/8" long. Crank assembly, 6 components: Shaft, 11-11/16" long x 5/16" square plus 7-1/8" leg bent at 90 degrees and tapered, material, steel, CF, FS-1020, Spec. QQ-S-633. Knob, oval handle 7/8" wide x 1-7/8" long with shank 1/2" O.D. x 1-1/2" long, material, malleable iron casting, Spec. QQ-I-666. Spindle, 2" long x 3/8" O.D., material, brass. Spacer, 1/2" O.D. x .125" wide, material, brass, composition 22 1/4 hard, Spec. QQ-B-626. Washer, 3/8" O.D. x .031" thick, material, brass, composition 22, 1/2 hard, Spec. QQ-B-626. Cotter Pin, 3/32" x 3/4" long, steel. Strap assembly, 3 components: Strap, 40" long x 3/4" wide, material, cotton webbing, .72 oz., type-IIb, water repellent, mildew resistant, Spec. MIL-W-530 with 1 bronze buckle 3/4" wide and 2 snaps, No. 204 approved source. Strap assembly, strap, one, 17-1/2" long x 2" wide, type II, strap, two, 17-1/2" long x 1" wide, type III, Strap, two 5" long x 3/4" wide type IIb. Strap, two, 15-1/4" long x 3/4" wide, type IIa. All straps, material, cut length webbing assembled with binding, cotton thread. Rings, 2, steel, 3/4", No. 204 approved source. Buckle, 2, bronze, type I, class 2, 1", Spec. MIL-B-543. Slide, 2, approved source. Webbing, binding, and thread shall be water repellent and mildew resistant. Connector assembly, 5 components: Block, 6 sided, approx. 2-3/4" long x 1-5/8" wide x 13/32" thick, material, plastic, Spec. MIL-P-14. Terminal, two, 13/16" long x 5/16". 60 degree bend x 7/16" wide x 1/32" thick, material, brass, hard, Spec. QQ-B-611. Binding post, two 23/32" long x 7/16" O.D., brass 1/2 hard. Nut, two, 7/16" O.D. x 9/64" long, knurled, material, brass, 1/2 hard. Washer, two, 7/16" O.D. x .032" thick, material, brass, hard. Spool assembly, 8 components: Disc, 1 formed shape with 6 curved webs, dished hub, center, curved ends, 9" O.D. x 5/16" high x .035" thick, material, steel, FS-1020 CR, annealed, Spec. QQ-S-640. Disc, 1, same as above, an additional

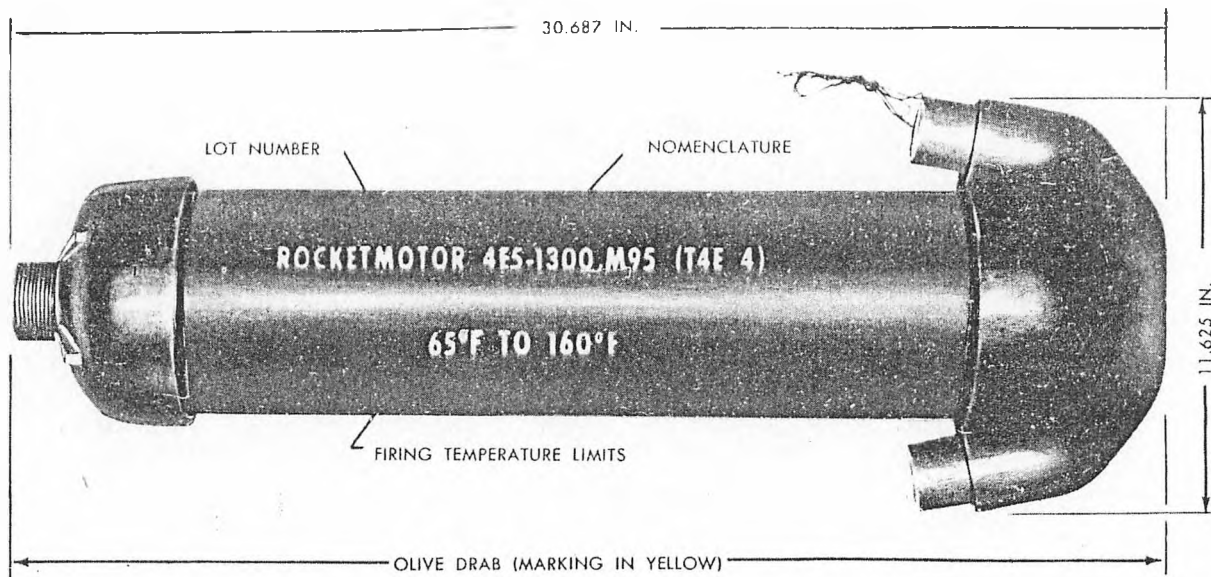
seven 3/8" diameter holes, both discs have 6 slots for spool ends. Tube, one, 8-1/16" long x 9/16" O.D. x .035" wall thickness, material, steel, tubing, FS-1020, type IV, CDSR, Spec. S-643. Spool shaft, 8-1/8" long x 2-3/4" O.D. x .035" wall thickness with 6 lugs on each end, material, steel, FS-1020, CR, annealed, Spec. QQ-S-640. Hub, two 1-3/8" O.D. flange x 23/64" square center hole x 13/32" and 9/32" overall height, material, steel, FS-1020, CR, Spec. QQ-S-640. Grommet, 2, synthetic rubber approved source. Hubs, discs and spool shaft spotwelded together. Manufacturing firms bidding this item should have a technical staff familiar with government specs. and methods of fabrication of webbing and related materials, spotwelding, metal forming and machining in accordance with specs. This item is considered somewhat difficult to produce to applicable specifications.

06800. ROCKET, MOTOR, M54, 66MM

Manufactured according to MIL-A-2550, 20 component parts, Body, material high strength extruded aluminum alloy, 8.5" overall length, cylinder shaped 1-1/2" O.D., 1/2" of modified buttress thread, 1.3" I.D., extends 6", necking down to a cone base. Cone is .8" O.D. at its base and extends at 20 degree angle to a 2.1" diameter at its opening. Wall thickness is simultaneously tapered from .12 to .04". Six equally spaced fin eyelets circularly located on the cone. Body is hydrostatically tested. Fin, material aluminum alloy sheet, 3.6" long x .5" wide x .05" thick. Retainer Fin, material chipboard as per MIL-C-2439, 2.8" diameter x 2" wide, Fin Spring, material steel spring wire. Manufacturing firms bidding on this item will require a technical staff of engineers to attain mass production quantities normally required by Ordnance. This item is considered difficult to manufacture and company should have 2 years immediate experience extruding 7001 aluminum.

09848. ROCKET MOTOR, M95, METAL PARTS, ASSEMBLY

Approx. 34-11/16" long x 11-5/8" wide. Manifold section x 6.06" body diameter. Assembly consists of 12 components. Body, motor, approx. 29" long x 6.06" diameter x .29" wall thickness with spherical radius base and external threads on open end. Must withstand internal hydrostatic test 3500 PSI for 10 seconds after welding adapter on base, material, steel FS-1020 or hot rolled sheet, MIL-S-18729. Manifold 6.84" diameter x 5 1/4" long parabola shape nose with 2 integral reverse nozzles with internal threads extended on 10 degree angle from nose. Internal thread to fit motor body, material, steel casting, QQ-S-681, class 80-50. Finished part must withstand internal hydrostatic test 3500 PSI for 10 seconds Trap, rear, three prong spider shape, prongs spaced 120 degrees apart, 2.97" diameter x .39" wide x .19" wide hub with thread holes in prongs and hub, material, steel casting, QQ-S-681, class 65-35 or steel 1030 to 1040 special quality, ASTM A107. Nozzle, 1.89" diameter x 2.9" long, taper bores (rear) 19 degrees



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front 60 degrees threaded O.D. 1.31" long, material, steel C1117 to C1137 cold finished. Base, adaptor, 2.53" diameter x 1.84" long, 1.49" I.D. with chamber one end for welding to Rocket Motor base, material, steel, C1010, C1024, and C1027. Other components, rod, resonance, connector rod, ring trap, arm trap, and strip trap. All steel 1020 fabricated by welding to make trap assembly, 1 each. Firms quoting this item will require competent technical staff. This item is considered somewhat difficult to produce to meet specifications.

10471. RADHAZ FILTER ASSEMBLY

Radhaz Filter Assembly, 8881727, consists of seven parts as follows: Radhaz Filter, approx. 3.47" L x .344" major D, source: Sprague Electrical Company, North Adams, Mass. part number 80183; Case, approx 1.672" L x 1.438" W x .95" H with .025 wall thickness, various holes from .092 to .77" D, Material: Brass, Composition #4, Spec QQ-B-63, case without holes may be procured from Hudson Tool and Division Company, 18 Malvern Street, Newark, New Jersey part number HU-6375-61/64-BR; Cover, 1.62" L x 1.387" W x .188" H with .025" wall thickness, material and source same as case, part number HU-6375-CA-BR; Connector, electrical, I.T. & T. Cannon, Los Angeles, California part number CA-2304-1685 or Bendix Corporation, Sidney, New York part number 10-229925-5P; Feed Thru Terminal, Sealelectro Corporation, 610 Fayette Avenue, Mamaroneck, New York part number FT-SM-32-TUR; Feed Thru Terminal, MS-17156-2; Clinch Nut, .275" D x .406" L, Material: Brass, commercial half hard (AMS 4510), protective finish, cadmium plate, type 1, class 3, Spec QQ-P-416, may be procured from Elastic Stop Nut Corporation of America, Union, New Jersey part number 92-NKCS-40.

11178. PETROFIT KIT

Consists of two parts; Plug, 1.375" D x .778" thick with recesses 1.164" D x .385" D and .4365" D x .250" D, OD threaded 16UN-2A, Material: Aluminum alloy 2024-T4, ASTM B211, protective finish 7.33 of MIL-STD-171, Sleeve, 1.160" OD x .325" W, Material: Same as above.

09910. SHIPPING & STORAGE CONTAINER, XM473E1 WARHEAD FOR 762MM ROCKET

Approx. 11-2/3' long x 3-2/3' wide x 3-1/3' high, consist of approx. 75 different component parts such as bolts, nuts, hooks, cams, pins, springs, washers, plates, shafts, screws and brackets. Fabrication made by machine forming, shearing, drilling, threading, spot welding, welding, forging, zinc and cadmium plating, chamfering, waterproofing exposed plywood joints and painting. Materials involved are steel sheets, plate, rods, bars, wire; and stainless steel plate, sheet and strip; along with 3/8", 1/2" and 1" plywood covers and wood joists. There are requirements for an effective quality assurance system MIL-I-45208, rough handling, assembly and welding provisions. This item can be considered moderately difficult to produce.

10577. SHIPPING & STORAGE CONTAINER, REUSEABLE WARHEAD, M17A1

Is approx. 35" long x 35" wide x 36" high, consisting of approx. 15 different component parts, such as brackets, connectors, strapping, nuts, cap screws, log screws, washers, hex nuts, material, wood, any group, Spec MIL-B-2427 and MIL-C-104, framing, 2" x 4", sheathing, 1", diagonal bracing 1" x 4", grade and quality of lumber for Grade A boxes, interior has (4) saddle sections 9" long x 11" high x 1-5/8" thick, complete assembly is skidded, primed and painted. This item is not considered difficult to manufacture in accordance with ordnance specifications and standards.

09849. SKID, LAUNCHING, DEMOLITION, CHARGE, M3, PARTS & ASSEMBLY

Consists of various sub-assemblies with 296 drawings. Skid, hull, 135" long x 57-3/8" wide x 22-1/4" high, wall thickness varying from 5/8" to 1-13/16" boat shape, front and rear compartments, full width, 3 external ribs on bottom, full length, side rails approx. 2-5/8" thick, 2 thicknesses of fiberglass cloth on the outside and 2 thicknesses inside, space in between to contain necessary layers of fiberglass mat, woven roving or cloth to obtain design thickness, material, cloth-plain weave, 8 oz./sq. yd., glass mat, 1-1/2 oz./sq. Spec. MIL-M-15617A, glass woven roving-plain weave, 12 oz./sq. yd., Spec. MIL-G-19663, impregnating resin-thermosetting, polyester AR463, approved source, color-resin mix, approved source, Gel coat-thermosetting polyester type, olive drab, completely cover all outside surfaces of hull .010" thick, finished hull to be waterproof. Skid panel cover, varying thicknesses, 112.9" long x 54" wide to a taper point, material, fiberglass, same as hull above. The majority of the metal parts are machined or formed from aluminum. Material, aluminum alloys, 2024-T4 and 6061-T6, sheets, plates, tubing, square bars, hex bars, extruded shapes, steel, C1020 and 4130. The electrical control system is considered complicated. Extensive production testing will be required strength test, electrical continuity, launcher operation and

internal air test of 1 lb./sq. in. on front compartment and aft compartments, etc. Manufacturing firms bidding this item will require a competent staff of welding, electrical and mechanical engineers, metallurgists, tool engineers to design and maintain precision tools to produce precision parts. This item is considered extremely difficult to produce in accordance with standards and specifications.

11242. SPACER, LEAD CUP, f/T46E5 ADAPTER BOOSTER

Flat disc, threaded on outer diameter with three (3) drilled holes, OD, 2.200-24UNS-1A thread, center hole, .172 + .003 diameter concentric with pitch diameter of thread 2.1715, with TIR .015, with countersink .22, .01 deep, two /2/ drilled holes on center line of center hole 1.47 diameter, 1.44 basic inches apart, 12 inches deep, drill point permitted, material, Hot-rolled carbon steel bar, grade 1115 to 1120, 1015 to 1020, ASTM A107 or cold finished carbon steel, grade 1115 to 1118, ASTM 108, protective finish, electrodeposited zinc, Specification QQ-Z-325, Type II, Class 3 per or Cadmium plating, Specification QQ-P-461, Type II, Class 3, per MIL-STD-171. Inspection will be in accordance with Item Specification PA-PD-2874A, dated 16 January 1967 and EL-9217199 sheets 1 and 2. This item is not difficult to produce, however, production rates require modern close tolerance machines and tooling.

11154. SUPPORT, MOLDED, ASPHALT-ASBESTOS f/M105A2 CONTAINER

The support consists of two differently sized, shaped, and punched steel discs molded together inside of an asphalt-asbestos ring. The discs, formed by punching, are .049 and .0747 inch thicknesses, respectively. The steel conforms to Federal Specification QQ-S-698. One disc requires a protective finish to withstand six hours of salt spray per Federal Specification QQ-M-151. The other disc has the edge of its center hole rolled grommet-like. The asphalt-asbestos ring conforms to Military Specification MIL-C-13212A (MU) and other applicable drawings. The ring material conforms to Military Specification MIL-P-43090, and is black unless otherwise specified. The completed support is a ring of approximately 4-3/4 inches diameter and 27/32 inch thickness or width with a 2.355 inch diameter center hole.

10446. SHIPPING AND STORAGE CONTAINER CNU-80/E25

Approximately 7 feet, 10 inches long by 35 inches wide by 24 inches high, weight approximately 625 pounds, fabricated of steel as a base and a cover, and consists of approximately 40 different components. Major components: Base, approximately 94 inches long by 35 inches wide by 14 inches high, U-shape cross-section with steel strip, angle, and channel as flanges, braces, skid holder, and spacers on outside

of shell. Shell is .375 in thick with ends .0747 thick, material low-carbon steel per Federal Specification QQ-S-698. Material of other steel supporting members conforms to Military Specification MIL-S-12505. Cover has four steel, cadmium plated, spring loaded handles. Four Skids, approximately 26-1/4 inches long by 4 inches wide, 4-1/8 inches high, material is protectively finished group IV wood per Military Specification MIL-B-2427. Two Interior Supports consist of four notched and cut pieces of 12 inch square, 1-1/2 inch thick, type III, unicellular, polyethylene per Specification MIL-S-10070 glued to two pieces of 29-3/4 inch by 17 inch, 1/2 inch thick, type I, class I container grade plywood conforming to Federal Specification NN-P-515. Two End Pads, 30 inches by 17 inches by 3-1/4 inches thick, two Top Pads, 30 inches by 15 inches by 5-1/4 inches thick, two Lower Pads, built-up and notched, 30 inches by 7-1/2 inches by 15 inches thick, all of class 3 polystyrene per Federal Specification PPP-C-850. Other minor components, hardware, identification plate, pins, and adhesive not detailed here, are required. Assembly is by welding, bolting, and adhesive. Container requires cleaning, priming, and painting per applicable drawing. Two identical Fixtures to prove fit of contents within the container are required. Fixture components are one cherry wood block 6-1/8 inch by 10 inch by 10 inch, and six cherry wood dowels 76 inches by 2-15/16 inches diameter, one aluminum alloy tube formed from .19 inch thick sheet approximately 21 inches by 27 inches, and miscellaneous hardware. Stringent container tests are required, such as edge and corner drop, end impact, vibration, forklifting and stacking. This item is considered difficult to manufacture in accordance with applicable specifications.

11616. SLEEVE (T45E7 ADAPTER BOOSTER)

The sleeve is cylindrical in shape with an outside diameter of 2.67 inches, an inside diameter of 1.78 inches and an overall length of 3.3 inches. Material Aluminum Alloy Extruded, 6061, 6062 or 6063, Temper T6 or T62, ASTM-B221. Alternative Material - Aluminum Alloy Drawn Seamless Tube, 6061 or 6062, Temper T6, ASTM-B210. Alternative Material - Aluminum Alloy Bar/Hollow/6061, 6062, or 6063, Temper T6 ASTM-B221.

09972. SPACER, FRONT FOR SHELL, 155MM, SMOKE, M116B1, HOWITZER

Binders board, Commercial, specific gravity .8 minimum, 1.0 maximum, approx. 3.25" O.D. x 1.30" I.D. x .090" thick. This item is not considered difficult to manufacture to specifications.

09973. SPACER, FOR SHELL, 155MM, SMOKE, M116B1, HOWITZER

Binders board, Commercial, specific gravity .8 minimum, 1.0 maximum, approx. 4.40" O.D. x 1.30" I.D. x .090" thick. This item is not considered difficult to manufacture to specifications.

09948. SUPPORT, TOP, FOR STANDARD CONTOUR FUZE

Top, 10-29/32" long x 5-1/2" wide x 2-1/2" thick, 8 holes truncated cone shape, 1-15/16" deep, 2 holes 1" O.D. x 1" deep, 1 hole, thick, 8 holes 2-1/32" O.D. x 1" deep at top reduced to 1-3/4" O.D. to 2-1/16" depth, material, both parts, plastic foam, molded polystyrene, Type C, maximum moisture content at time of manufacturing .3%, all surfaces to be coated with Catanac SN anti-static agent in an isopropyl alcohol-water mixture. This item is not considered difficult to manufacture to Ordnance specifications.

09949. SUPPORT, BOTTOM, FOR STANDARD CONTOUR FUZE

It is approx. 10-29/32" x 5-1/2" x 2-1/2" maximum with various sizes and shaped cavities formed in mold with some cavities extending through the material, Bottom, approx. 10-29/32" x 5-1/2" x 2-1/2" maximum, with various sizes and shaped cavities formed in mold with small holes extending through the material, Material, plastic foam, molded polystyrene, Type I, Class I, Spec. MIL-P-60312 with Engineering Order 36762-S dated 18 May 1965, density 3 pounds per cubic foot, color green number 34373 or darker FED-STD-595. Differences in shade from that specified due to manufacturing process will be permitted per Spec. MIL-P-60312. Parts are to be coated with anti-static agent such as Catanac SN, Class I only, or approved equal. Drying of molded parts is critical and parts are to be thoroughly dry in accordance with Spec MIL-P-60312 with Engineering Order 36762. Parts will be packaged and packed in accordance with Spec MIL-P-60312. This item is considered difficult to manufacture in accordance with applicable drawings and specifications, especially the coating, drying, test and packaging requirements.

10569. TAIL ASSEMBLY, FOR M126A1, GROUND SIGNAL

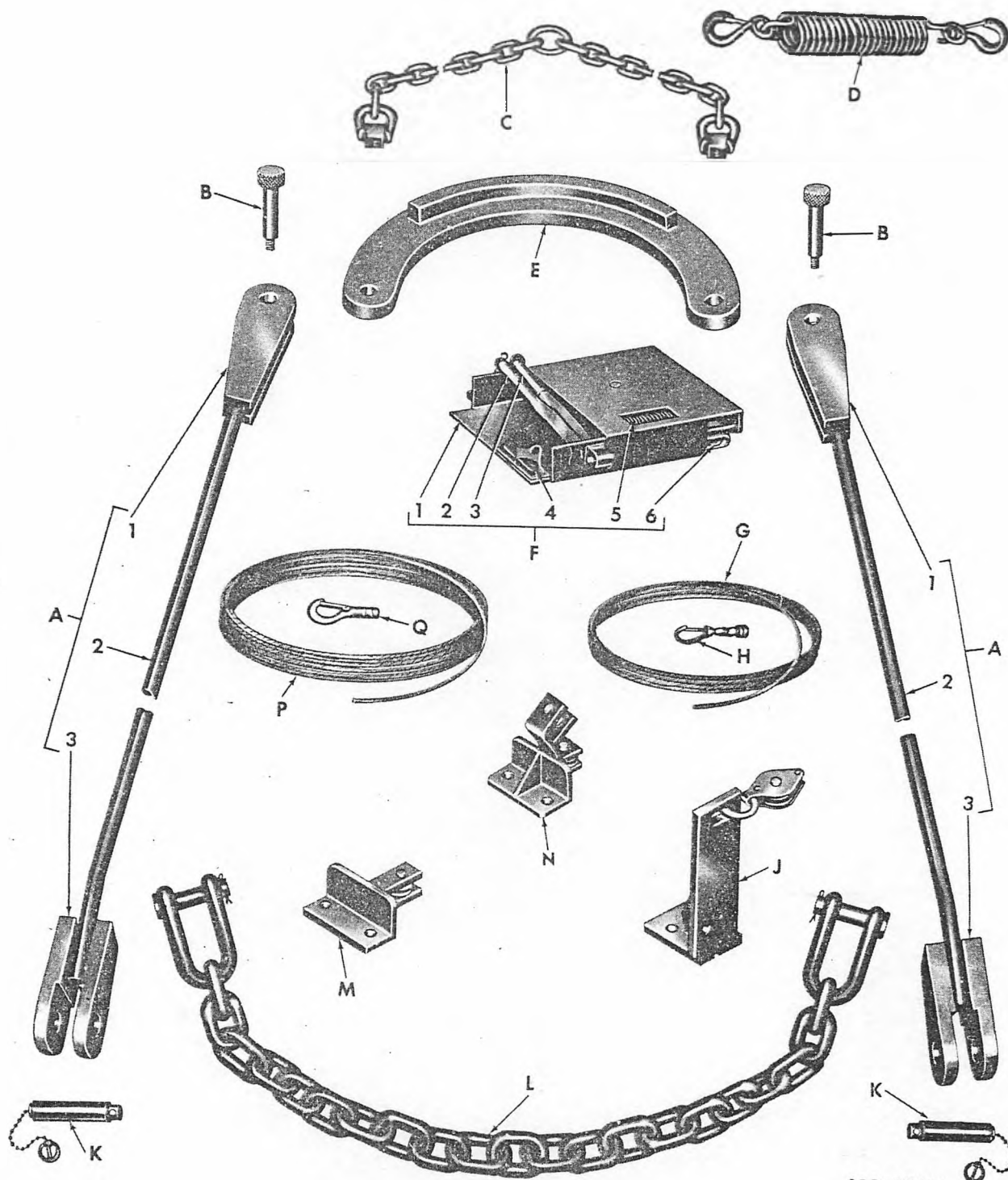
Is 2.791" long x 2.05" wide x 1.666" high, Tail Vane and Rib Assembly, (4 ea), consists of (1) vane and 2 ribs, Van (4 ea), 2.505" long x 1.66" wide x .005" thick, material, steel, strip, type 420, commercial, alternate material, steel, strip 410 Commercial, either material to be heat treated Rockwell Hardness C42 to C48, Rib (8 ea), 2.752" long x .187" wide x .018" thick with angle bend .203" from one end, material, steel, strip, corrosion resisting, Class 1, condition A, finish 1, Ring Upper, 1.125" I.D. x .63" wide x .028" wall thickness, with (6) oval slots, equally spaced around the periphery, material, tubing, steel, 18-8 seamless, alternate material, tubing, steel, Type II, Spec MIL-T-8606 Ring, Lower, 1.32" I.D. x .193" wide x .028" wall thickness, material, tubing, steel, 18-8, seamless, alternate material, tubing, steel, type II Spec. MIL-T-8606 Ring, Lower, 1.32" I.D. x .193" wide x .028" wall thickness, material, tubing, steel, 18-8, seamless, alternate material, tubing, steel, Type II Spec. MIL-T-8606, two (2) ribs are spot welded to each vane and 4 vane assemblies are spot welded to upper and lower rings. Manufacturing firms bidding this item will require a technical staff of engineers and welding technicians familiar with steel fabrication and welding. This item is not considered difficult to manufacture to applicable specifications.

10176. TEST, VEHICLE, DUMMY

Complete assembly consists of three component parts. Base Section, Hemisphere, 1.812" diameter x 1.40" I.D. with (6) .072" raised flutes on outside and various size holes and countersink on inside, material, zinc alloy Die Casting, alloy AG40A, Spec. ASTM-B86. Protective chromate finish required. Top Section, Hemisphere, same as Base Section except opposite hand. Element, Inertia, .771" diameter x .50" long with .187" diameter trunion each side x .471" long, material, zinc alloy Die Casting, alloy AG40A, Spec. ASTM-B86. Protective chromate finish required. Complete assembly, Top and Base Hemispheres with Element Inertia inside cemented together with epoxy cement, Spec. MIL-A-14042, to withstand an impact of 5 pounds. Protective finish painted, packaging and precision gages required. This item is not considered difficult to produce.

10145. TWO AND PUSH ATTACHMENT ASSEMBLY FOR DEMOLITION KIT, M157, MPTS

13 assemblies, 75 components, Extension Bar Assembly 2 each, Bar, Extension 2 each, 66" long x 1" square, material, steel, bar, Type II, Class I, Shackle No. 1 (4 ea) 10.01" long x 1" thick x 4.06" one end tapered to 2.06" opposite end with machined step 5.75" long x .094" deep, material, steel, plate, Type II, Class I, Shackle No. 2 (4 ea) 9.81" long x 1.5" thick x 3.75" diameter one end tapered to 2.06" opposite end with machined step 3.94" long x .56" deep, material, steel, plate, type II, Class I, Shackles 1 and 2 welded



ORD D247A

TOW & PUSH ATTACHMENT ASSY, f/DEMO. KIT, M157, MPTS





to bar ends, drill .815" diameter hole in No. 1 and 1.845" diameter hole in No. 2. Drag Plate Assembly, Bar, drag, circular segment, 13.44" I.D. radius x 1" wide thick, material, steel, Type II, Class I, Plate, drag, circular segment, 11.94" I.D. radius x 4.12" wide x .75" thick, 32.06 width, .8125" holes each end of segment, material, steel, plate, Type II, Class I, Bar welded in center of plate. Multiple Sheave Assembly, 8 components, Bracket No. 1, 3.53" long x right angle 1.718" wide x 1.718" high 2 each .39" holes one side, Bracket, Sheave No. 1, two angles bends 90 degrees and 32 degrees 1.53" long x 1.28" x .562" x 1.01" wide x .187" thick, material, steel, FS-1020, Plate, sheave, 2 each 1.38" long x 1.01" wide x .125" thick, material, steel, FS1020, Gusset, 90 degree angle flat plate, 1.47" x 1.47" x 45 degree angle x .125" thick, material, steel, FS-1020, Pulley, 1.02" O.D. x .40" wide, pulley groove, .12" radius hole .2656" diameter, material, steel, C1117 or C1118 Plate, sheave 1 each 1.32" long x 1.01" wide x .187" thick, material, steel, FS-1020, Brackets, gusset and 3 plates welded together. Single Sheave Assembly, Bracket, Sheave No. 2, 2.91" long with 45 degree bend x 1.02" wide x .125" thick, material, steel, FS-1020 Bracket, No. 2, 90 degree, angle plate, 1.655" x 1.655" x .365" long x .187" thick with two holes, steel, plate, Type II, Class I, Plate 2.14" long x 1.01" wide x .125" thick, material, steel, FS-1020, Pulley support post Assembly, Base, 4.03" long x 3.03" wide x .375" thick, material, steel, FS-1020, Plate, 3.03" wide x 9.53" high x .375" thick, material, steel, FS-1020, Gusset 2.03" wide x 6.03" high, 3 angle cuts, x .25" thick, material, steel, FS-1020, Ring, 1.37" I.D. formed from .437" diameter rod with .06" opening, material, steel, C1020 or C1030, Frame, pulley U-shape, 4.28" long x 2.405" wide, x .125" thick, 3 holes through, material, steel, FS-1020, Pulley, 1.76" O.D., x .51" thick .28" concave radius, .3906" center hole, material, steel, C1117 or C1118, Spacer, 2 each .57" long x .37" I.D. with .06" wall, material, steel, tubing, Type I, III or IV, FS-1020, Chain Assembly No. 1, Chain Approx. 82" long, material, steel, galv-mooring, 5/8" type A, GR II, Class I, Shackle, 2 each 1" shackle, steel, round pin, Chain Assembly No. 2, Chain, 2 each 24" long, material, steel, galv-mooring 1/4" type A, GR II, Class I, Ring, 1/4" x 2" diameter, material, steel, Eye Nut Modified 2 each 5/8" eye nut, bent 45 degrees, Spring Assembly, Spring, 2.81" O.D. x .343" wire diameter x 14.05" closed length, 18.2" length supporting 320 pounds, 510 pounds without permanent set, 30 active coils, 1.25" I.D., plate and heat treat, material, steel, wire, Type III, Hook, 2 each 7/16" safety snap, Socket Wrench assembly, Holder, arm 2.78" diameter x .89" thick 4 holes 90 degrees apart .53" deep, material, steel, C1137 or C1141, Arm, straight 9.18" long x .625" diameter, material, steel C1137 or C1141, Arm tapered, oval shape, 11.15" long x .515" wide tapered from two datum points, machined pilot one end, material, steel, C1137 or C1141, Straight Socket Arm Assembly, Arm, long socket, 6.54" long x .625" diameter, material, steel, C1137 or C1141, Socket, 4.64" long x 1.64" O.D. x 1" I.D. cavity 4.23" deep with

8 point star socket cavity .672" deep, material, steel, C1117 or C1141, arm and socket welded together. Holder and four arms welded together. Clevis, Pin Assembly 2 each, Pin 2 each 7.77" long x 1.375" O.D. with end diameter 1.16" x .88" long, material, steel, corrosion resisting, Fastener, Pin spring and 15" chain, standard 2 each. Wrench, structural with circular head with oval tapered handle, 17" long x 2.77" O.D. jaw with 1.09" jaw opening, material, steel, fabricate to Spec. GGG-S-636, Bolt, stripper 2 each 3" x 5/8" - 11 NC-3A by 3/4" O.D. Cable No. 1, 7 x 19 x 8' long x 1/4" diameter Cable No. 2, 7 x 19 x 27' long x 1/4" diameter, Gear Box Assembly, 11 major and 46 minor components, 13" long x 2-3/8" wide x 8" high, Housing Assembly, 13 components, welded construction 1/4" and 1/2" plate, Center Spool Assembly, 4 components, gear, spool, doweled and screwed together, Wrench Assembly, racket wrench with handle, Shaft, approx. 2.374" long x .5625" diameter x 32' finish, material, steel corrosion resisting, bar, Class 414, Condition T, Spec. QQ-S-673, Shaft, Main 8 1/2" long with various diameters .75" to .437" material, steel, corrosion resisting Worm, modified approved source, Boston gear works Cat. No. DH 1618, Bearings, needle, 4 each and bearing, ball thrust 1 each. Manufacturing firms bidding on this item will require a competent technical staff consisting of engineers and tool design engineers to design and maintain precision tools to produce precision parts. This item is considered difficult to produce in accordance with Ordnance Specifications.

10008. TARGET DETECTING DEVICE, MK 43-Mod-0 (M20E1 Sensing Element)

The MK 43 is used in conjunction with electrical fuzes, to provide proximity fuze systems for bombs. The device senses distance from target and provides the electrical impulse needed to initiate the fuze air burst. It consists of several components of overall weight of 20 lbs. approx., 12.125" L approx x 4-3/4" D; Nose Cone is 4-3/4" D x 4" L approx; Battery is 2-1/2" L x 2-1/4" D; Oscillator and Amplifier Assy is 2-3/8" L approx x 2-3/8" D; Socket Assy is 2-1/2" L x 2-3/8" D; Metal Case is 6 1/2" L x 2-3/4" D. Battery is the PS 207A. Nose Cone is plastic; encasing can is aluminum and contains a polystyrene shield. The technical data is classified and the item is considered extremely difficult to produce to applicable specifications.

10343. TAPE, COMPUTING, DEMOLITION CHARGE

Consisting of two tapes, self coiling steel, each separately cased to suit manufacturers standard, one tape six (6) feet L and one three (3) feet L, approx one half inch W, each case one and seven eighths inches high by two (2) inches W by five eighths inches W, with a three and a half inch long scale on one side riveted together by a sie plate on the other side, end plate riveted with brackets at end of tapes. Both concave and convex sides of tapes calibrated as required by drawings, for breeching, pressure, steel and timber, scale also calibrated on side of double case. Calibration and identification

is extensive on all surfaces of tapes and cases. Spec PA-PD-2659. Purchase Description applies. This item is not considered difficult to manufacture by the tape manufacturing industry.

09612. VANE, LOCKING ARM AND SPRING ASSEMBLY FOR FUZE, VT, BOMB NOSE

Consists of 3 assemblies and 8 components. Tags, 2, printed, 2-3/4" L x 1-3/8" W, material, manila paper. Pin and ring assembly, Pin eyelet, 5/16" OD with shank, 1-22/32" L, material, steel, cadmium or zinc plated. Ring, 1 1/2" coils, 1-1/32" OD x .065" thick, material steel, FS1005 to FS1020, finish 4. Seal, 1/2" D x 5/32" thick, material, lead with steel wire, 8" L x 3-strand #25 (.018") AWG. Stop bracket Assembly, consists of 3 components: Spring, 1562" L x .064" D, 2-1/2 turns free length, heat treated, material, steel, comp. A, cadmium or zinc plated. Stud, tapered and stepped D for riveting to arm, .377" D x 35/64" L with two .070" D spring holes, material, brass or alternate steel, FS1010 to 1020. Arm, formed shape, approx. length 3" x .536" W x .10" thick with .250" D hole, counterbored 3/8" D for stud material, steel, FS1009 to FS1020, cadmium or zinc plated. The above items are not considered difficult to produce in accordance with Government standards and specifications.

10477. WARHEAD, 2.75" ROCKET, SMOKE, WP, M156 METAL PARTS

Assembly approx. 13.03" long x 2.79" maximum diameter, consists of three components, Body 9.69" long x 2.79" maximum O.D. nosing down to 2.065" through a 35" radius, 2.25" I.D. closes to 1.681" through a 32.5" radius, material, steel tubing, seamless, condition CDSR, 1020, Spec. QQ-T-830, Base, 3.00" long x 2.4" maximum O.D., 1.92" I.D., cup shaped, 2.4-6-29 degrees stub Acme - 36 modified thread on .167" of the O.D., material, steel bar, hot rolled, C1018, Spec. QQ-S-633, Adapter, 1.62" long x 2.06" maximum O.D., .79" bar with a 1.455 counterbore and 1-7/16 - 16 UN-2B thread on the I.D., material, steel bar, carbon, cold finished, C1018, C1020, C1025, C1117 - C1141 Spec QQ-S-633. Base and Adapter are silver brazed to body. The assembly must withstand a hydrostatic pressure of 5000 pounds per square inch for a minimum of 15 seconds. It is considered difficult to manufacture.

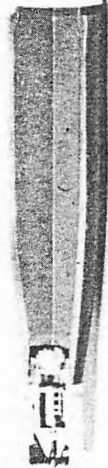
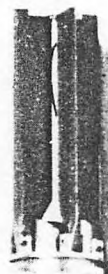
10316. WARHEAD, 2.75" ROCKET, XM151, METAL PARTS ASSEMBLY

Approx. 12.90" long x 2.79" maximum O.D. consists of three components, Nose, 10.40" long x 2.79" O.D. at the bourrelet tapers down to 1.68" through a 35" radius on the ogive beginning 5" from the base, I.D. varies from 2.23" at the base to 1.37" at the nose, 0.27" minimum wall thickness, base end is counterbored to a 2.40" diameter for a depth of 0.59", nose end contains a 1-7/16-16 UN-2B thread to a minimum effective depth of 0.73", material, pearlitic malleable iron, Grade 60003, Spec. MIL-C-46971, alternate material, iron, nodular graphitic (ductile iron) Class 5 annealed, Spec. MIL-X-11466; Base, 3.005" long x 2.40" O.D., cup shaped, 1.92" I.D. with a 2 degrees maximum draft, 0.32" bottom thickness, 18 degree inside chamfer on the mouth with a 2.4-6-29 degree Stub Acme-30 Modified thread on approx. 1.2" of the O.D., material steel plate, Spec. MIL-S-3289 or steel bar, hot rolled, for cold shaping, Spec. MIL-S-11310, or steel bar hot rolled, special quality, Spec. ASTM-A107, or pearlitic malleable iron, Grade 45010, 50007 or 60003; Spec. MIL-C-46971, Cap, Protector, .932" long x 1.844" maximum diameter at flange, cup shaped, I.D. tapers from 1.402" at mouth to 1.249" at bottom, .031" wall thickness, flange is .121" thick, material, polyethylene. The nose and base are assembled by silver brazing 360 degrees around the fairing surface, the assembly must withstand an internal hydrostatic pressure of 5000 pounds per square inch for a minimum of 5 seconds followed by an air-leak test at 150 pounds per square inch for a minimum of 15 seconds. The assembly receives a zinc phosphate base followed by a lusterless lacquer or enamel finish on the outside and a primer on the inside. This item is considered difficult to manufacture in accordance with the applicable specification.

10357. WARHEAD, SECTION, GM, TRAINING, XM209

Approx. 6" in diameter, 20.46" long, major components: Ogive, inert, approx. 6" diameter, 4-3/4" high, .050" wall thickness, aluminum

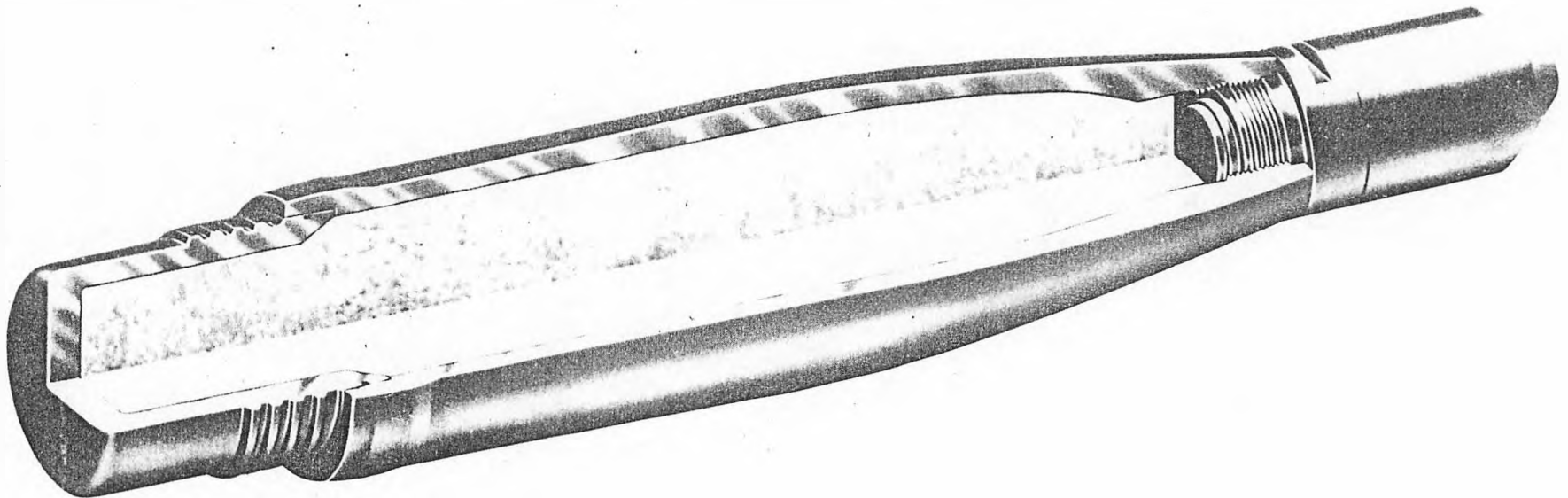




275 ROCKET







**WARHEAD, 2.75 IN. ROCKET, H. E.: XM151  
WITH FUZE, ROCKET: XM423E1 OR XM427E1**



alloy sheet 6061-0, Spec, QQ-A-250/11B, heat treated after forming, Shroud, inert, approx. 6" diameter with external key, 16-1/4" long, with varying wall thickness, embossed, material, aluminum alloy extruded 2014, T6, Spec. QQ-A-200/2A, Ballast solid cylinder and cone shape, approx, 5.7" diameter, 6-5/8" long, material, aluminum alloy, Spec. QQ-A-225/4A, assembly is with clinch nuts, machine screws and tapping screws. Total assembly weight must be maintained within specified limits. The manufacturing firm bidding on this item will require a technical staff of engineers and metallurgists. Gaging is extensive. This item is considered difficult to produce to meet applicable specifications.

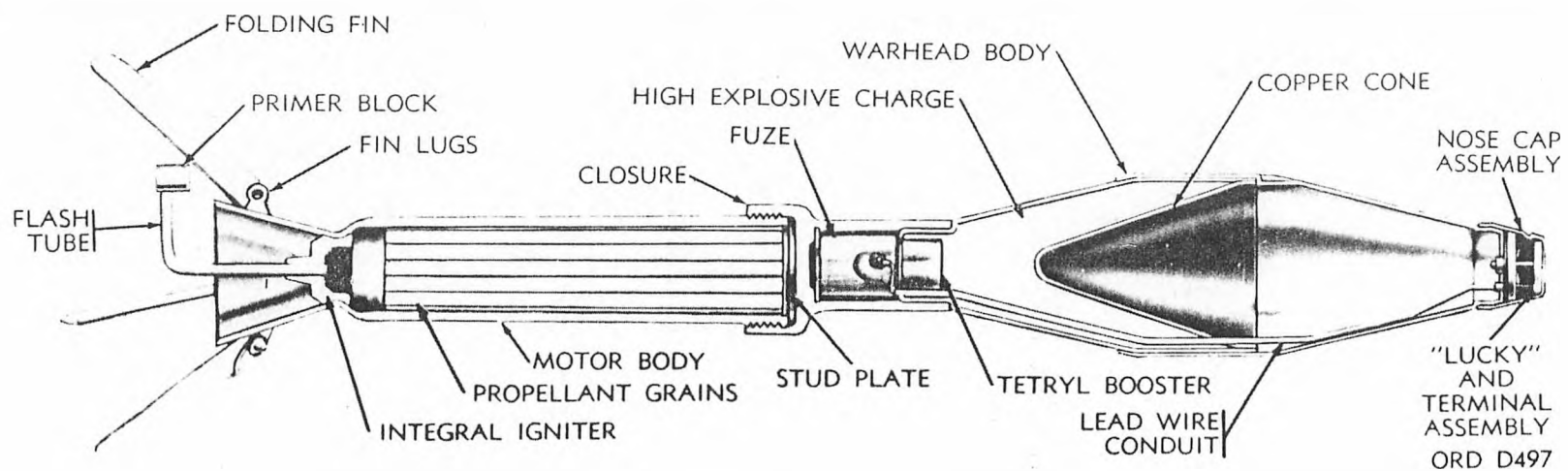
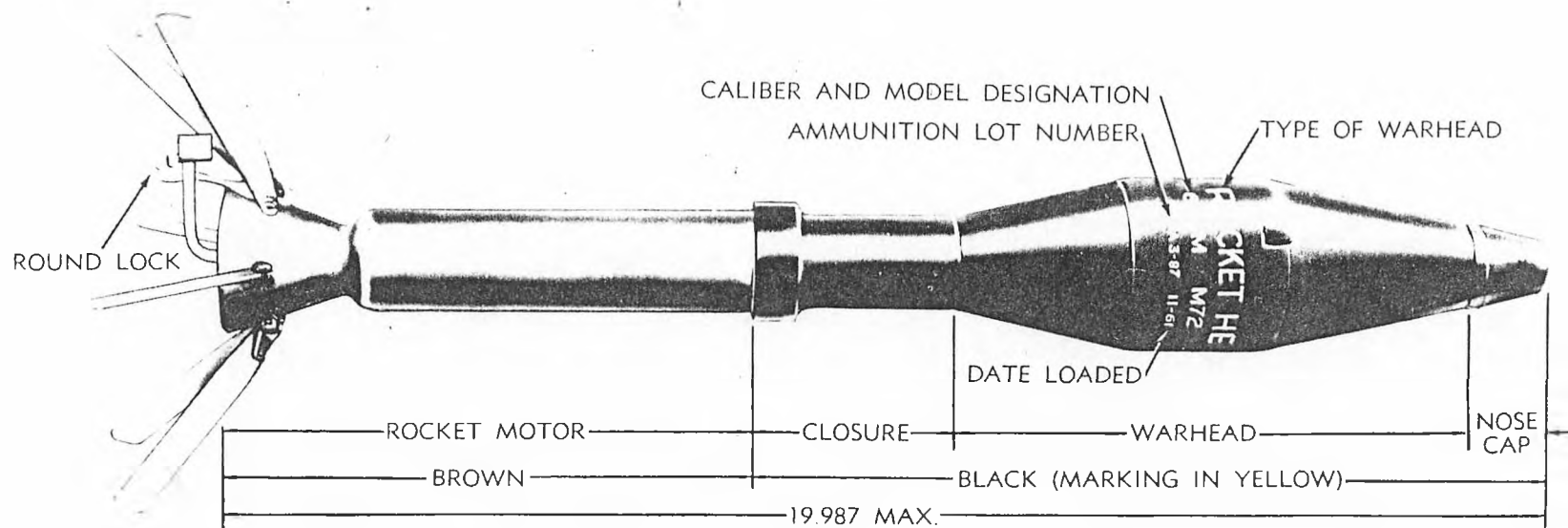
10266. WARHEAD SECTION, M8E1, 318MM, PRACTICE ROCKET

Is approx. 6 1/2' long with a base diameter of approx. 1' and has a projectile-shaped geometry. The section assembly consists of 60 components with 3 major assemblies. Rocket Ogive, approx. 14" long, cone shape with base about 6" in diameter, consisting of aluminum alloy (6061 or 5154 plate) skin, clevis and ring assemblies. Forward assembly consists of support assembly and 2 mild detonating fuze assemblies, latch assembly and aluminum alloy forward skin. This assembly is approx. 2' long, frustum cone shaped with approx. 12" and 6" diameters. Rear assembly consists of aluminum alloy rear skin, forward and rear frame, base assembly, bulkhead plate and cartridge retaining assembly. The rear assembly is approx. 3' long and 12" diameter. The balance of the smaller components consists of plates, rings, plugs, levers, springs, brackets, adapters, cams, screws, washers, gaskets, sleeves, covers, tubes, pins, discs, rivets, and screw. Fabricating by machining, forming, molding, and casting from brass rod, aluminum sheet and strip, alloy steel, copper sheet and strip, copper tubing, aluminum tubing, and low carbon steel with various surface treatment. The inspection equipment is extensive and radiographic inspection is required. The contractor shall provide and maintain an effective quality assurance system in compliance with MIL-I-45208. This item is considered extremely difficult to produce in accordance with specification.

09696. WARHEAD, 66MM, ROCKET, HE, M18 METAL PARTS ASSEMBLY

Approx. 2-5/8" diameter x approx. 9" long. Body Head is approx. 5.10" long x approx. 2.568" diameter at large end and approx. 1.129" diameter small end, material: Steel, strip, FS1009, FS1015, to FS1020, cold rolled and annealed, temper No. 5 finish No. 1 or No. 2, Spec. QQ-S-640. Ogive is approx. 5.79" long x approx. 2.598" diameter at large end x approx. 1.262" diameter at small end, material: aluminum alloy, sheet, 3003-0, ASTM B209, thickness .070" to .027". Liner is





ROCKET, 66mm, HE, M72



approx. 3.129" long x approx. 2.604" diameter at large end Conical shaped, .039" wall thickness, material, copper, strip, cold rolled, soft annealed, ASTM B152. Body head and ogive, shrunk fit and crimped. Insulator is approx. .33" x approx .986", material: molding plastic and molded plastic parts, thermosetting, type CFG, color optional, Spec. MIL-M-14. Conduit is approx. 9.43: developed length x .098" diameter outside and .065" diameter inside, material: tubing brass, alloy No. 3, ASTM B135. Connector insulator is approx. .135" diameter at large end x .085" diameter inside at small end, material: brass strip, Composition I, spring temper, Spec. QQ-B-613. Gasket nose, approx. .860" diameter inside x .125" O.D. x .003" thickness, material, Gasket, Class B, Spec. MIL-P-5516. Screw insulator No. 2 x 1/4" long Type B. style: -IS Spec. FF-S-107. Conduit be soldered to liner, shrink fit head body to liner. Manufacturing firms bidding on this item will require a technical staff of engineers, metallurgists and tool engineers, to design and maintain precision tools for mass production quantities normally required by ordnance. This item is considered difficult to produce to meet applicable specifications.

10399. WARHEAD SECTION, GM, XM131/XM44 WITH OGIVE ASSEMBLY METAL PARTS

Is approx. 6" diameter x 15.58" long. The major components are: Body, funnel shaped, approx. 6" diameter, 9.4" long and an 0.08" wall thickness, 2 1/4 - 12 external threads small end, material aluminum alloy, extruded 2014-T6, Spec. QQ-A-200/2A, Cone, truncated, approx. 5.8" major diameter, to 1/2" diameter, 4.69" overall height with 0.087 wall thickness, material copper strip cold rolled soft annealed, Spec. QQ-C-576. May be fabricated by either cold drawing process, followed by annealing, coining and machining, or flo-turn process followed by annealing and machining, Shroud/cylinder with external key approx. 6" diameter, 11 1/4" long, machined with varying internal diameter, and embossed, material aluminum alloy, extruded, 2014-T6, Spec. QQ-A-200/2A, Cabler and Doubler Assembly, Doubler, flanged cylinder of body diameter 5-5/8" I.D., 0.7" long, material aluminum alloy tubing Type I seamless drawn 6061-T6, Spec. WW-T-789, Cable assembly, consisting of AFT and forward connectors and cable. AFT Connector and forward connectors have two brass female sockets in glass filled moulded plastic plugs of special shapes, Cable is 72 ohm twin lead transmission line cable approx. 10" long, may be procured from Belden Manufacturing Company, Chicago, Illinois, Part Number 8222, Span Nut, approx. 2-3/8" diameter, 0.84" long, with 2 1/4-12 internal thread, material aluminum alloy bar 7075, Temper T-6, Spec QQ-A-225/9A.

10256. WARHEAD SECTION 762MM ROCKET PRACTICE, M38 METAL PARTS ASSEMBLY

Is 115" length x 30" diameter projectile shape approx. 1618 pounds and consists of approx. 104 different components. Major components, Skin ogive, cone shape, 21-3/4" length x 10-1/2" diameter large end,



1/2" diameter small end, .088" wall thickness, material, Aluminum alloy, Spec. QQ-A-327 T6 or H38 condition. Skin Forward, approx. 36" length x 24" diameter large end, small end 10-1/2". .080 wall thickness, material Aluminum alloy, sheet optional, Spec. QQ-A-327 and heat treat to T6 Spec. QQ-A-327. (6) .221" holes large end (45) .031" center holes (12) .221" holes small end. Skin, rear, 40.7" length x 29.77" diameter large end, 24" small end, .125" wall thickness (90) .06" holes large end, (60) .06" holes small end, material, Aluminum sheet 6061-T6. Skin Base, 13-3/4" length x 30" diameter large end, 27-1/2" diameter small end, .125" wall thickness (38) 1/8" diameter holes large end (60) 1/8" holes small end, 4 1/2" hole thru sidewall, material Aluminum sheet 2024-T3 or Alclad 2024-T3, Spec. QQ-A-362. Frame Base, 30" O.D. x 27 1/2" I.D. x 3.9" length, with internal lugs, holes, slots and counterbores, material Aluminum alloy Class 4-T6, Spec. QQ-A-596 or alloy 195-T6, Spec. QQ-A-601, Frame, separation, 24.66" diameter large end x 24" diameter small end x 2.86" length (120) 10-32 thread holes on O.D. material Aluminum alloy 195-T6 or 220-T4, Spec. QQ-A-601 or Aluminum alloy class 4-T6, Spec. QQ-A-596, Ballast, 20" O.D. x 14 1/4" length, material, steel, Class E, Spec. MIL-S-11415. Plate, 29.7" diameter x 1/2" thick (15) .06" diameter holes and (2) 1" diameter holes (4) 8-32 threaded holes, material, steel plate, carbon, structural Type II, Spec. QQ-S-741. Tube 4" diameter 1/2" wall thickness, 13" length, material, steel tubing, seamless or welded, as welded MT1010 - MT1020, Condition CDSR, Spec. QQ-T-830. Fitting Base, 13.44" length x 2.53 wide x 1.8" high with .65" wide rib in center with (22) .242" holes, material, aluminum alloy Composition 2014-Temper T-6, Spec. QQ-A-367. Minor components consists of bolts, screws, washers, brackets, pins, spring and rivets, etc. This item is considered extremely difficult to produce in accordance with rigid Ordnance Specifications.

10230. WASHER, P-133102

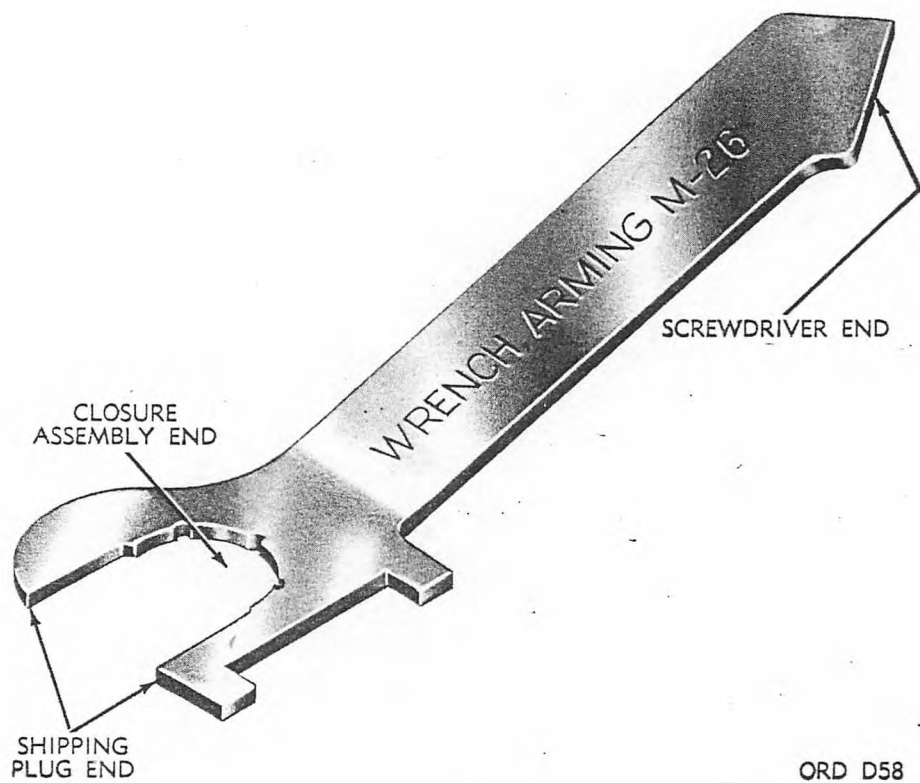
Consisting of one piece 1.489" O.D. with hole in center .98" I.D. It is pressed to form concave shape .070" deep. The material .018" thick, steel, material No. 4, Spec. MIL-S-17919. Heat-treat to Rockwell 15N scale 82 to 86. Protective finish No. 5.3.2 of Spec. MIL-STD-171 and class 1, type Z of Spec. MIL-P-16232. Must have retention force of 1300 to 1900 pounds when tested in accordance with AEI 254 dated 11 August 1964. The part is difficult to make and heat-treat to meet the retention force without cracking.

10578. WRENCH, ARMING, M-26, FOR MINE AT, M21

Open end one piece approx. 7" long, handle width 1", Wrench Section 1.14 opening with .97 diameter throat and (3) grooves 60 degrees apart .07 radius in throat, head diameter 2.26 material, steel strip .119 thick temper T2 Spec. ASTM A109, Protective finish Zinc Plate or Phosphate and paint to withstand a 72 hour salt spray test. This item is not considered difficult to produce.







ORD D58



## PART II

### LOADED ITEMS NORMALLY PROCURED

CAUTION: It is to be understood that LOADED items will be delivered completely assembled and loaded with explosives.

Firms indicating an interest in LOADED items must have adequate facilities for handling bulk and loaded explosives, including humidity and temperature controls to meet requirements for moisture content, and have past experience in handling and loading sensitive explosives.

When being considered for contract award for any LOADED item the Government, in a pre-award survey, prior to award, will thoroughly investigate the ability of the bidder to comply with safety and security requirements.

10308. BOMB, HE, BLU-3/B1, MPTS (Less Body) (Loaded)

Approx 4-3/4" L x 2.5" D. Procured Detonator loaded consists of approx (45) component parts (7) sub-assembly. Major components, Vane, (6) required 3.6" L x 1.03" W, width formed to 1.35" Radius with hinge tabs, material, steel strip .020" thick, 1074 or 1057 C.R. heat-treat and austemper to 82.5-85.4 Rockwell 15N scale, plating finish withstand 96 hr. salt spray. Base 2.424" D x .678" W with various slots grooves counterbores, holes and threads. Material Aluminum alloy, Die Casting ASTM B85-60, protective finish to withstand 96 hr. salt spray. Tab, Spring "T" shape 2.135" W x 3.23" H formed radial, material, stainless steel .020" thick 301 or 302, 1/4" hard. Strap, Safety 7.9" L x .385" W x .020" thick, material, stainless steel strip 301 or 302 1/2" hard. Nester "star shape" 1.838" D x .473" W with hole and C. More in center and various wall thickness, material, plastic compound cellulose acetate Butyrate, Type 1, Class MH, Spec L-F-349. Slide, Lower, 1.198" L x .183" thick x .455" W with hole, C. Bore, threaded hole and rack gear, teeth one side, material: zinc base alloy, die casting, Spec. ASTM B86-57T, protective finish to withstand 96 hr. salt spray. Pin, Firing, .188" D x .57" L with various D points, and hole in end, material, stainless steel 303, SE. Cup 2.51" OD X 2.43" ID x .59" D x .94" wall thickness with various slots and holes. Material, Aluminum alloy, sheet 6061-0 or 6061-T4 ASTM B209.61. Protective finish to withstand 168 hr. salt spray. Lever, .362" D x .092" thick (3) lug design with 3 Holes, material, brass comp. 24 hard. Pin, Safety, 1.035" L x .158" D with various diameters material, stainless steel 303, SE. Support Vane 2.44" D "Star shaped" formed with various lugs and holes, material, Aluminum sheet 7075-0 .040" thick ASTM B209-61, heat treat to T6, protective finish to withstand 168 hr. salt spray. Spring Catch, 2.066" D "star shape" with various slots and holes, material, stainless steel sheet .016 thick comp. 301. Cover, Base, 1.997" D x .323" thick with hub one side, hole in center with C. Bore and recess, material, Aluminum Die Casting Alloy SC-84B or SG-100A cold chamber, ASTM B85-60 or impact extrusion Aluminum 2014-0 or 6061-0, protective finish to withstand 96 hr. salt spray. Plate Top, 1.224" L x .55" wide x .040" thick with Radius one side and various precision holes and slots, material brass strip, comp 1, 2 or 11, half hard, Spec QQ-B-613. Plate Bottom, .875" L x .55" W, Radius one side with various size holes, material, same as Plate Top, .040" thick. Other small components springs, washers, screws, rivets, shafts, gears, pinions and "O" rings. Considerable quantity of gages and test equipment will be required. Rigid tests required such as arming time, function, static load, and torque, etc. Contractor will require an effective quality assurance system in accordance with Spec MIL-I-45208. This item is considered very difficult to manufacture in accordance with applicable drawings and specifications.

10249. BOMB, BDU-28/B MPTS, LESS BODY

Is an assembly composed of about /10/ ten major components. Base is about 2.42 inches in diameter and 1.35 inches long. The diameter is

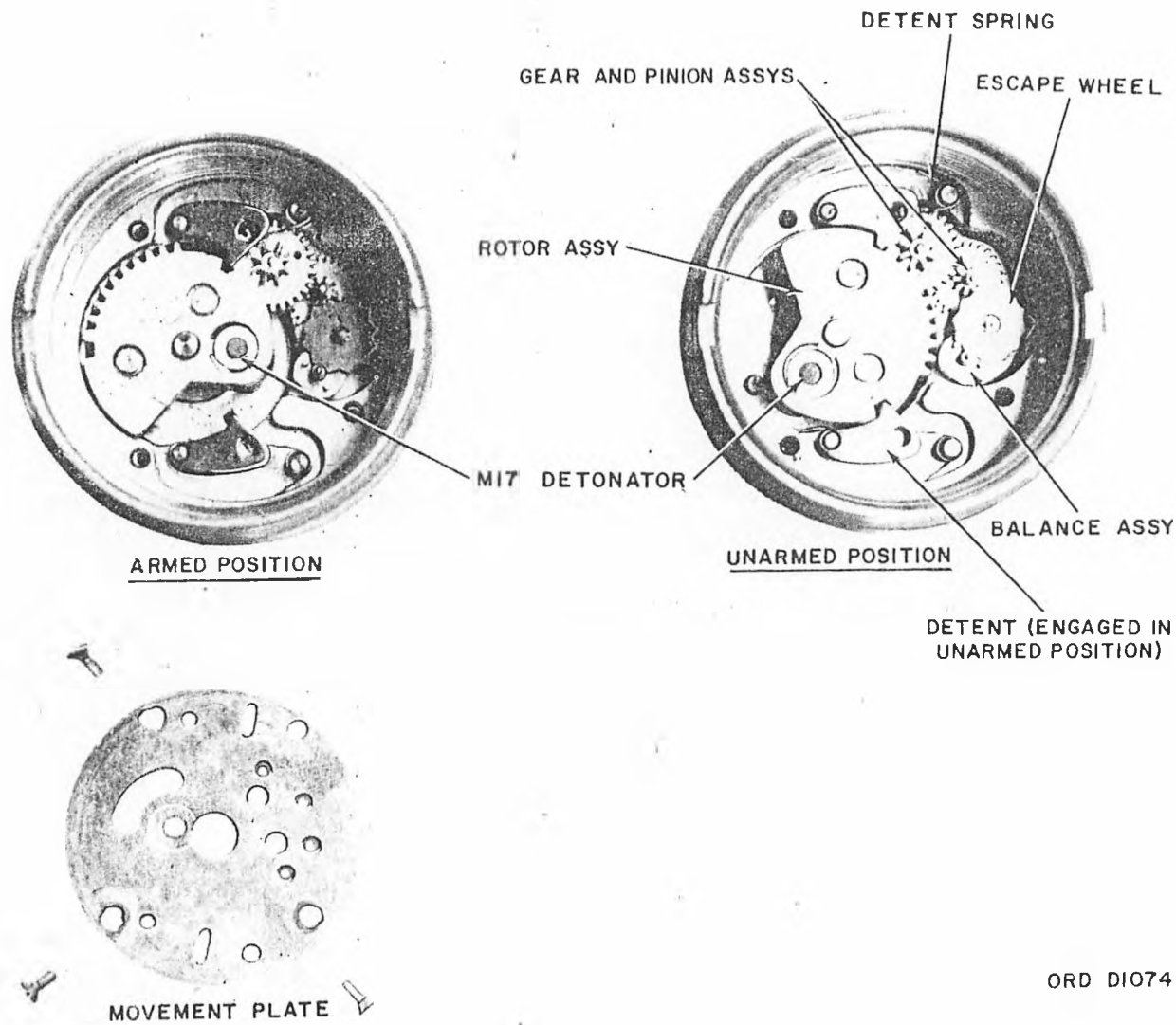


stepped down three times, 2.30 inches, 2.25 inches and 1.90 inches. The 2.25 inch diameter is threaded. On one side is a keyway .36 inch wide by .07 inch deep. The material is aluminum alloy, die casting SC-84B or SG-100A, Specification ASTM B85-60. Arming Spring is a conical helical spring with a free height of 1.20 inches. The material is .125 inch diameter bright music wire, Specification QQ-W-470. Metal coating/finish number 1.1.2.2 of MIL-STD-171/ is to withstand salt spray test requirement. Cup is about 2.43 inches diameter by about .65 inch deep with nine .06 inch wide slots in wall. The material is .04 inches thick aluminum alloy sheet 6061-T4, Specification ASTM B209. The protective finish/number 7.2.2 of MIL-STD-171/ is to withstand salt spray test requirement. Catch Spring is a one-piece six-petaled spring 2.07 inches wide made from .016 inch, corrosion-resistant steel, composition 301, Specification MIL-S-5059. Each petal is .70 inch wide and is bent up .030 inches. Protective finish number 5.42 of MIL-STD-171. Vane Support is a 2.44 inch wide, six-petaled sheet which is made from .04 inch sheet, aluminum alloy 7075-0, Specification ASTM B209-61. Heat treat to temper T6 per MIL-H-6088. The sides of the petals are bent up 90 degrees to form flange. The resulting width of the petal is .50 inch. Finish number 7.3 of MIL-STD-171 to withstand salt spray test requirement. Vane is a formed sheet about 3.60 inches long with a .065 inch wide slot running 2.47 inches from the wide end. The narrow end has two flanges on each side and results in a .50 inch width. The cross section of the 1.03 inch wide end shows a 1.27 inch radius. The material is strip steel C1075 cold rolled, number 4, Specification MIL-S-17919. Metallic finish number 1.1.2.2 of MIL-STD-171 to withstand salt spray test requirement. Vane spring is a cylindrical helical spring about .38 inches high. Spring acts in torsion with .375 inch long legs on each end of coil. Material is .028 inch diameter steel wire, Specification QQ-W-470. Metallic coating MIL-STD-171, finish number 1.1.2.2/ to withstand salt spray test requirement. Nester is a six-petaled configuration about .473 inches thick and 1.84 inches wide. The plastic is cellulose acetate butyrate, Specification L-P-349. Spring Tab is sheet metal shaped like a crucifix with the arc spread of 2.135 inches and a total height of about 3.23 inches. The arms are rolled up on a radius of 1.32 inches. Two flanges are bent up on each side of the headpiece. The material is .020 inches thick by .385 inch wide by approximately 8 inches long. Strap to have holes, tabs and dimples. Material is corrosion-resistant steel, Type 301, finish number 1 of Specification MIL-S-5059.

00550. BOOSTER, M125A1, ASSY, MPTS, W/LOADED M17 DETONATOR

Approximately 2" D x 2" L, Booster Sub-Assy, (6) sub-assy's and 9 components, Balance Staff Assy-Balance, .26" OD x .12" L with (2) flats .22" across diameter with .07" Center hole, material, Brass, Comp 1 or 22, full hard, Spec QQ-B-626, Staff, balance, .0725" D x .316" L, material, FS1117 to FS1141, Spec QQ-S-633, or steel, corrosion-resisting Class 416, Spec QQ-S-763, Pin, (2 ea), .03"





ORD DI074

BOOSTER, M125A1, MPTS



OD x .113" L, material, steel, corrosion-resisting, FS416, Cond H, Spec QQ-S-763, Body Assy, (5) comp, Body, 2" OD x 1.49" L, multiple machine operations, material, Brass forging, Free machining, Spec MIL-B-13351, Shaft, rotor, .13" OD diameter x .68" long, .12" L knurl on OD, Pin, detent spring, (2 ea), .094" OD x .345" L, Pin, rotor stop, (1), .0945" OD x .345" L, Pin detent pivot, (2 ea), .0785" OD x .25" L, material for rotor shaft and above pins, steel, corrosion-resisting, Class 416, Spec QQ-S-763, or steel, FS1117 or FS1141, Spec QQ-S-633, Cover, dust, hat shape, approx 1-7/8" OD x .665" high x .04" wall thickness, material, plastic-polyethylene, Spec LP-390 Natural Grade I, Type I, Detent, rotor, (2 ea), eccentric shape, approx .398" L x .332" W x .095" thick, material, Brass, Comp 2 or 24, hard min, QQ-B-613 or Sintered Brass, 78.5 per cent copper, 20 per cent zinc, 1.5 per cent lead, min tensile, 25,000 PSI, Elongation 8 to 12%, Escape Wheel Assy, (2) comp, Wheel, escape, star shape, 12 teeth equally spaced, .386" point to point distance x .02" thick, material, steel FS1009 to FS1020, CR, annealed, temper No. 3, Spec QQ-S-640 or steel spring, Comp 3, Spec MIL-S-11713, Pinion, escapement, .1354" OD x .316" L x 9 teeth .147" L, material, steel, FS1137 Min, Spec QQ-S-633, or steel, corrosion-resisting; Class 416, Spec QQ-S-763, No 1, Gear and Gear and Pinion Assy, 2 comp, Gear No. 1, .3835" OD x .0242" thick, 27 teeth, with .1157" D x 9 spline center hole, material, Brass, Comp 24, hard min, Spec QQ-B-613, Pinion, No 1, .1578" OD x .316" L with 9 teeth, material, steel, FS1137 min. Spec QQ-S-633 or steel, corrosion-resisting, Class 416, Spec QQ-S-763, No 2, Gear and Pinion Assy, Gear, No 2, .4496" OD x .0505" thick, 27 teeth, .171" ID, 8 spline center hole, material, same as Gear No 1, Pinion No 2, 2162" OD x .344" L x 8 teeth, material, same as Pinion No 1, Plate, movement, 1.614" OD x .0327" thick, with numerous and various diameter holes, round, oval or kidney shape, material, Brass, Comp 2 or 24, full hard min, Spec QQ-B-613, Rotor Assy, (7) comp, Rotor, gear segment, 1.012" OD x .079" thick x 42 teeth in 360 degrees, 9 tooth actual number generated in a 120 degree section, material, Brass, Comp 24, hard min, Spec QQ-B-613, Cushion, Detonator, .24" OD x .15" ID x .037" thick material, cork, compressed, commercial, Pin, rotor gear, .093" D shank x .42" overall L x .13" D x .036" W head, material, Brass, Comp 1 or 22, hard, Spec QQ-B-626, Pin, Rotor lock, .104" OD x .19" L, material, steel, corr-resisting, Class 416, Spec QQ-S-763, Spring, Rotor lock pin, .11" L x .078" ID x .006" wire diameter, 3 active coils, material, steel, wire, corrosion-resisting, Cond B, Spec QQ-W-423, Rotor Assy loaded with M17 lead azide detonator. Screw, plate (3 ea), .188" L x .146" D, slotted flat head, .073" (No 1) 72 NF thread, material, Brass, Comp 1 or 22, half hard min, Spec QQ-B-626, or wire, Brass, half hard min, Spec QQ-W-321, Seal, dust 1/2" D x .005" thick, pressure sensitive, approved source or engineering agency approved equal, Spring, right hand detent, .135" OD x .1" ID with .26" leg and .35" leg x 5.3 coils x .0133" wire D, material, steel, spring, music wire, Comp A or B, Spec QQ-W-470 or wire corrosion-resistant, Cond B, Spec

QQ-W-423, Spring, left hand detent, same as above wind left hand, Cup, booster, 1.703" OD x 1.5359" ID x .064" base thickness with 1.6", L.H. ID thread, material, Aluminum alloy (AS-3) cond 1/2 hard, Spec QQ-A-350 or Aluminum alloy, Comp 6061F, Spec MIL-A-12545, Cup, closing, .185" ID x .197" OD x .005" wall thickness with 45 degree angle lip at open end, material, gilding metal, Spec JAN-G-439. Manufacturing firms bidding on this item will require a competent technical staff of engineers to design and maintain precision tools to produce precision parts by mass production techniques. This Booster is considered extremely difficult to produce in accordance with applicable standards and specifications.

10558. CAP, BLASTING M4

Consists of six component parts and/or assemblies. Female Connector oval shape 2-1/4" L x 1/2" W and shorting plug, oval shape, 3/4" L x 1/2" W joined by a 1/2" W x 1-1/2" L band with male shorting prongs and female contacts, molded integrally, material, rubber, black class RS, grade 615 ABK. Lead wire cable, 100' L, 2 conductor, parallel (ripcord), type VI, class 1, color brown, Specification MIL-C-442. Lead wire molded integrally with above female connector and shorting plug. Cup approximately 2-1/4" L x 1/4" D x 1/8" wall thickness formed from aluminum alloy sheet. Cup loaded with charge RDX, intermediate charge, lead azide, and igniter charge, DuPont igniter mix. Blasting cap consists of rubber plug approximately 1" L x 2-1/8" D molded around lead wires. Cup (loaded) and rubber plug assembly pressed together and crimped Resistance of assembled blasting cap and lead wire 1.60 ohms. Long lead cable assembly and blasting cap assembly connected by 2 connectors and crimped. Complete assembly M4 is wound around folded Kraft paper 5-1/2" W x 40" L. This assembly is rolled into a package 5" W x 6" L x 2-1/2" high.

01440. CAP, BLASTING, ELECTRIC, ASSEMBLY, M6 Loaded

Consists of 5 components and/or assemblies. Plug Assembly, 1.015" L x 0.219" OD molded around Lead Wire 2 each, 145" L. Material: plug-rubber, Class RS8 or RS9, Specification MIL-R-3065; wire - Type S, AWG22, condition soft, tin coated, Specification MIL-W-3861. Alternate - Rubber and Sulfur Plug Assembly, 0.427" L x 0.217" OD with cast sulfur plug, 0.588" L x 0.215" OD molded around lead wire. Material: plug-rubber, elastomer compound, Grade SC-815-BE1E3F1 ASTM 735, plug-sulfur, mica, graphite. Bridge, Wire, connection one end of lead wires, 0.00095" OD. Material; 79% platinum, 15% rhodium, 6% ruthenium, resistance 180 ohms per foot. Approved source: Signumnd Cohn Mfg. Co., Mt Vernon, New York, Part No. 851PT stress relieved. Cup, 2.29" x 0.242" OD x 0.222" ID, base thickness 0.020". Material: Aluminum alloy, sheet, temper 0, Specification QQ-A-318. Spool, 4.95" L x 0.416" O.D. x 0.04" wall thickness with slot cut on one end 0.365" L x 0.083" W. Material: boxboard convolute wound, Specification MIL-B-20467, with flour paste between layers. Alternate material: commercial Kraft pulp paper unsized, 0.003" thick. Charge, cup is loaded with base charge, RDX, Specification MIL-R-398 or Specification PA-PD-690, intermediate charge, lead azide, Specification PA-PD-1217; and ignition charge. Manufacturing firms bidding this item will require facilities to produce and load explosives and a technical staff familiar with pyrotechnic specifications and manufacturing processes. This item is considered difficult to produce in accordance with ordnance specifications.

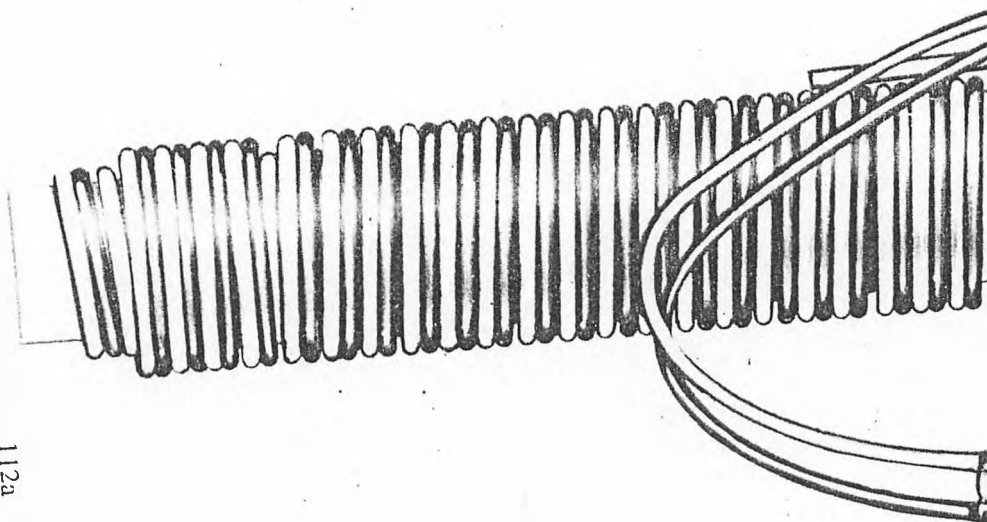
10129. CARTRIDGE, IGNITION, M2A1E1 (LOADED)

Approximately .80" in D x 2.43" L. Procured black powder loaded with primer in accordance with Purchase Description PA-PD-2566. Body

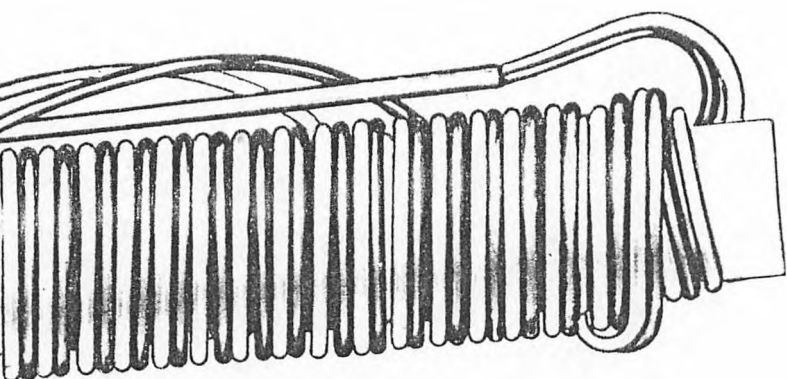




112a



CAP, BLASTING, SPEC ELECTRIC



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, ASSY, M6



Assembly, design similar to a shotgun shell, material, Paper Wad, hard-pressed, convolute wound, commercial. Base Cup, material, steel commercial .015" thick, finish cadmium coated, Class 3, Body, material, plastic, clear or green, smooth surface, extruded, polyethylene, linear, non-oriented (Hercules HI Fax, 1700 or 1800), approved source, Hercules Powder Company, Wilmington, Delaware. Cap, Crimp, .780" D x .015" thick, material, brass, commercial. Wad, approximately .76" D x .30" thick, material, woodpaper, commercial. Primer, standard commercial construction for shot shell ammunitions, primer cup, approximately .209" D with .95 to 1.05 grains of mixture as specified on Drawing A-8835177. Complete assembly is loaded with 130 grains, plus or minus 25 grains, powder, black Class 3, Specification MIL-P-223. Assembly must meet moisture content of black powder, primer functioning and nonfunctioning, tests, waterproofness and proving ground firing tests. Manufacturing firms will require facilities for loading and packaging explosives with a comparable technical staff. Gages and complicated primer testing equipment will be required. This item is considered somewhat difficult to produce in accordance with applicable specifications.

10581. CARTRIDGE, IGNITION, M8    Loaded

Approximately 1.93" L x .79" OD and the assembly consists of 6 components. Body Assembly, 2.18" L x .79" OD x .052" wall thickness, material, commercial paraffined cartridge paper, Specification MIL-C-11609, uncrimped length of outer body tube 2.34". Washer assembly, 2 components Washer, .732" OD x .16" ID x .067" thick, material, chipboard, plain, sheet, Specification UU-C-282. Disc, two, .73" OD x .002" thick, material, paper, onionskin, Specification JAN-P-157. Discs glued to each side of washer. One washer assembly is crimped inside of body assembly. Charge, propellant, M9, type II, approximately 123 grains. Body assembly is loaded and 1 washer assembly is crimped in opposite end. Manufacturing firms bidding this item should be technically staffed with chemists and technicians familiar with pyrotechnic manufacturing processes. This item is not considered difficult to produce to applicable specifications.

01670. CARTRIDGE, IGNITION M66    LOADED

Approximately .79" D x 2.10" L. The assembly consists of 7 components shown on 9 Ordnance drawings. Disc, .78" OD x .002" thick, material paper, onionskin. Cover, .22" OD x .002" thick, material, paper, onion-skin. Washer, .732" OD x .209" ID x .087" thick, material, commercial chipboard. Tube, .210" OD x 1.02" L with approximately .042" wall thickness, material, paper, jute drawn or Kraft commercial, Liner, 1.72" L x 2.32" W rolled from Brass strip .005" thick. Body Assembly material, standard commercial paraffined cartridge paper. Disc, Closing, .732" OD x .087" thick, material, chipboard commercial. The assembly is fabricated by gluing and crimping. This item is procured loaded

with powder M9 approximately 115 grains, web thickness .010". Firms bidding on this item should have necessary facilities and technicians to fabricate explosive items. This item is considered somewhat difficult to produce to applicable specifications.

01650. CARTRIDGE, IGNITION, M5A1, (LOADED)

Consists of seven /7/ component parts assembled as shown on Drawing C8880647. Disc, Drawing B8880652, material, paper, onionskin, specification MIL-P-157 .590 inches by .002 inches thick. Washer, Drawing B8880651, material, chipboard, plain, sheet, specification UU-C-282. Outside diameter .590" x .038" thick with center hole .209" D. Cover sides with a coat of shellac, specification TT-S-300. Tube, Drawing B8880650, material, paper jute drawn on Kraft Paper. /.0045 thick/commercial. /Tube consists of approximately 3 thickness of paper/, .736" L x .210" OD. Secure layers of paper with animal glue, type I, grade P1, specification MMM-A-100. Cover, Drawing B8880653, material, paper, onionskin, specification MIL-P-175. Tube Assembly, Drawing C8880649, consists of disc, washer, tube and cover, Secure disc and tube to washer and secure cover to tube with adhesive animal glue, type I, grade P1, specification MMM-A-100. Disc Closing, Drawing B8880654, material, chipboard, plain, sheet, specification UU-C-282, .590" D x .038" thick. Body Assembly, drawing C8880648, with tube assembly assembled inside. Material, body assembly is commercial paraffined cartridge paper/outside layer colored red and yellow/. Secure layers of paper with animal glue, type I, grade P1, specification MMM-A-100. Uncrimped tube is 1.74" advisory x .65" D. One end is crimped and sprayed with cellulose nitrate lacquer, type II, specification MIL-L-10287. Cartridge, Ignition, M5A1 Assembly, consists of body assembly and disc closing loaded with 40.0 plus or minus 1.0 grains of M9 Propellant, Type I, specification PA-PD-55 with ADD 55-1. End crimped over disc closing, and crimped end of cartridge sprayed with cellulose nitrate lacquer type II, specification MIL-L-10287. Stencil nomenclature, lot no. and year loaded on closing disc. The manufacture of this item is not considered difficult to produce to drawings and specifications.

10714. CARTRIDGE, IGNITION, M6, for/81mm ILLUMINATING PROJECTILE, M301A2 (LOADED)

Is approximately 2.13" L x .795" OD. The assembly consists of (6) components, Body Assembly, 2.38" L x .79" OD x .052" thickness, material, commercial paraffined cartridge paper, Specification MIL-C-11609, un-crimped length of outer body tube 2.54". Washer Assembly, two components, Washer, /2 each/ .732" OD x .16" thick, material, chipboard, plain, sheet, Specification UU-C-282. Disc, /4 each/ .73" OD x .002" thick, material, paper, onionskin, Specification JAN-P-157, disks glued to each side of washer. One /1/ Washer Assembly is crimped inside of Body Assembly. Charge, Propellant, M9, Type II, approximately 123 grains. Body

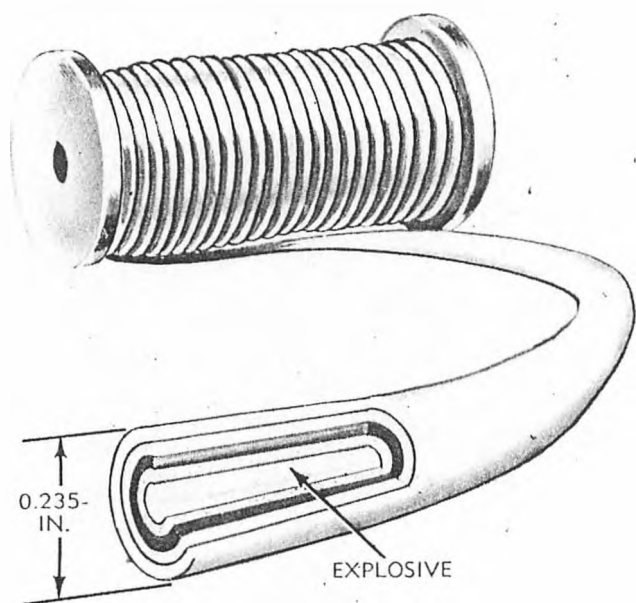
Assembly is loaded and (1) Washer Assembly is crimped in opposite end. Manufacturing firms bidding on this item should be technically staffed with chemists and technicians familiar with pyrotechnic manufacturing processes. This item is not considered difficult to produce to applicable specifications.

11736. CHARGE, DEMOLITION ROLL, M186, PARTS, LOADING, ASSEMBLY & PACKING

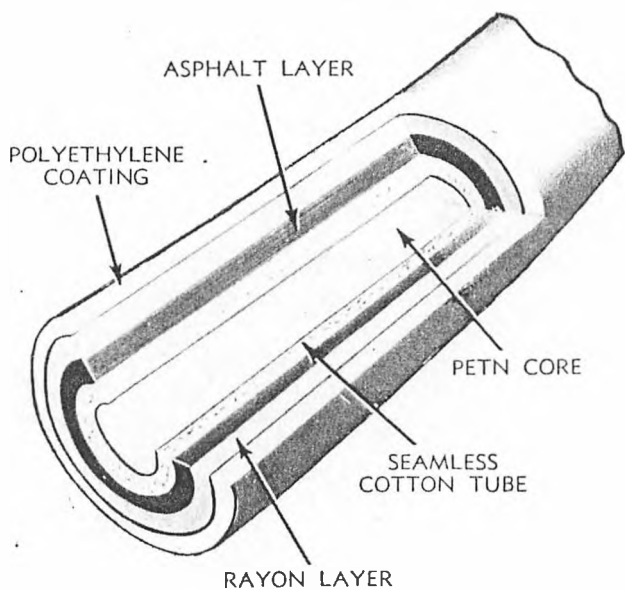
Consists of /8 each/ components or sub-assemblies. Parts Assy, Charge, Demolition Roll, consists of Disk/2 each/, 16.63 inch outside diameter, 3 inch inside diameter by .19 inches thick, material, plastic molding material, polystyrene, Glass Fiber reinforced, Type I, Specification MIL-P-21347. Core, .324 inches outside diameter, center core. 50 inch inside diameter supported by four /4/ webs 3.32 inches long by .12 inches thick for all web and core dimensions, hub at each end 3 inch diameter by .125 inches long to fit into disks. Material, plastic, polystyrene, glass filled, type I Specification MIL-P-21347. Slot thru outside rim of core .40 inches wide. Alternate construction, one or both disks may be molded as part of core. Rope, jute, three eighths inch diameter by 40 inches long, for final assembly, material, jute, type IV class 2, Specification, T-R-592. Cement, plastic per specification drawing B-9209347 for final assembly. Explosives, 50 foot long by 3 inches wide by .25 inches thick, material FLEX-X, Specification, MIL-E 46676, outer surface covered with tape, pressure sensitive adhesive film, size, 50 foot long by 3 inches wide by 1/32 inches thick. Specification, MIL-T-60394. Mark entire length at 2 foot intervals by numbers 1 through 25 and nomenclature, lot number and date at 4 foot intervals with ink, black, Specification TT-I-559. Holder, Blasting Cap, M8, /15 each Roll/ .56 inches wide by 1.51 inches long with three slanted protruding teeth to secure to Flex-X explosive, two dimpled spring arms hold blasting cap in holder, material, steel, strip, 1095, condition 2, Specification, MIL-S-7947, Heat treated to Rockwell C-47 to C-52 after forming and stress relieve, phosphate coated and remove hydrogen embrittlement for 3 hours after phosphating at 375 degrees. Bag, Packing, ammunition, For Charge Demolition, Roll, M186. Bag, 22-1/2 inches wide by 29 inches long finished, undeveloped 55 x 22-1/2 inches, material, canvas, cloth, cotton duck, type III. Specification, CCC-C-419, 8 and 1/4 ounce, with strap, carrying 74 inches long by 2 inches wide and 3 pull tabs 2 and 1/2 inches long by 1/2 inch wide, material for tabs and straps, webbing textile cotton, type 11b and 11a, Specification MIL-W-530, with 3 snap fasteners for each tab, specification, style 2, finish 2, Specification MIL-F-10884. Sewing, stitches, seams and stitching, Class 301, FED-STD 751 with nylon thread. Packing shall be Level A, Palletized in accordance with Specification. Manufacturing firms bidding on this item will require a competent technical staff of mechanical engineers, chemical engineers, and canvas fabricators for the handling and packing of explosive materials. This item is considered difficult to manufacture to applicable drawings and specifications.

10524. CORD, DETONATING, TYPE I, CLASS E LOADED

1000 foot lengths, PETN core, .235" max D, textile cover, plastic coated finish, shall withstand tests, 190 lb. minimum breaking strength, flame, impact, waterproofness, flexibility, sensitivity, temperature, etc., furnished on spools 3" OD x 9" L, chipboard center, side discs, two, 9-31/32" O.D. x .155" thick, material, No. 12 commercial binders board (sulphur treated), Spec. MIL-C-17124A. Firms bidding on this item should have a technical staff familiar with pyrotechnic manufacturing processes. This item is not considered difficult to manufacture to applicable specifications..







**ENLARGED VIEW OF  
SECTIONED END OF CORD**

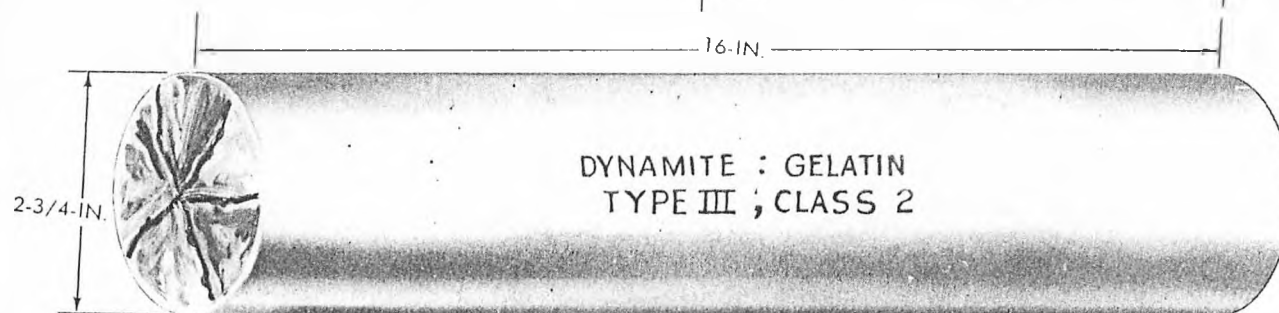
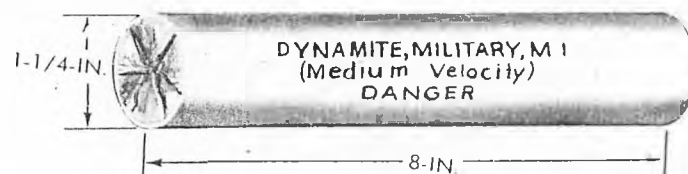
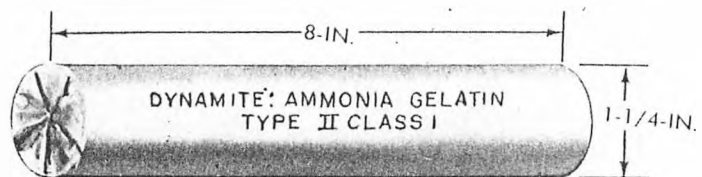
ORD D335



09845. DYNAMITE, MILITARY, M1 LOADED

Medium velocity dynamite. Cartridge, cylindrical paper shell 8" L x 1-1/4" D, material, plain, manila paper 70 lb. per ream, paraffin sprayed or dipped. Explosive composition, desensitized RDX, grained TNT, cornstarch, Polyisobutylene/Oil Gel. Dynamite shall meet material, consistency, composition, sensitivity, rate of detonation tests, etc., Specification MIL-D-45413A. Manufacturers of this item will require chemical engineers and technical personnel familiar with manufacturing processes and safety requirements in producing explosives. This item is not considered difficult to produce to applicable specifications.





117a

ORD D324



10252. FIRING DEVICE, DEMOLITION, PULL TYPE, M1 (LOADED)

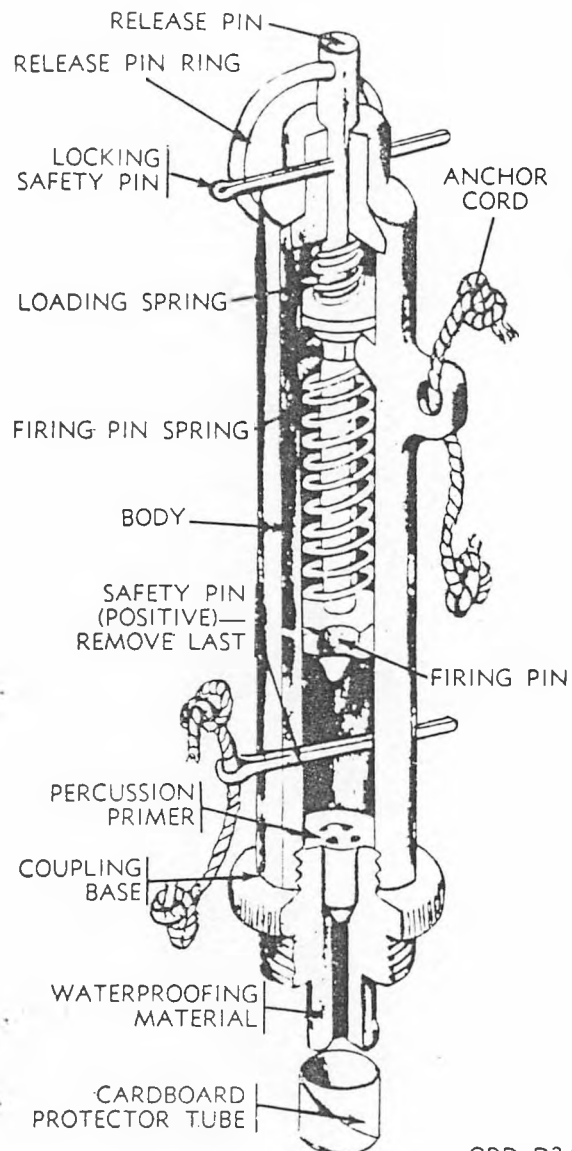
Consisting of eight components and 2 assemblies. Base, Coupling Assembly, four components, Base, Coupling, 1.01" L x .63" D, material, zinc base alloy, die casting. Gasket, .253" L, tapered .195" to .161" D, material, rubber, Type R. Class RS, Grade 510B-F7. Cup, shipping, .39" L x .255" ID x .031" wall thickness, material, plastic, cellulose, acetate butyrate, Type 1, Class H2. Primer, Percussion, M27, Assembly five components, Body, anvil, cup, cover, and charged with Styphnate, composition primer mixture or alternates. Wire Spool Assembly, two components, Spool, end 1-1/8" D x 1/4" W x 2-1/16" L with 5/8" ID, material, wood, soft pine, commercial, Wire, trip, steel, No. 24 W & M Ga/.023" x 80 feet long, material, steel, Form I, Grade FS1005 or 1010 Composition A. Head, .38" L x .448" D with .186" center hole, material, zinc alloy die casting. Pin, cotter pin, 2 each, split BFA33. Pin, Firing, 1.54" L x max. D .346", material, brass, rod, 1/3 hard. Pin, release, 1.13" L x .185" D with .32" D x .07" W flange, material, brass, rod, 1/2 hard. Ring, Pin, Release, 1-1/2 coils, material, wire, steel, Type II, .047", No. 18W M Ga, heat treated. Spring, Compression, 1.43" free height, 13 coils wire D .075" heat treated. Spring, loading, .75" free height, 7 coils, wire D, .024", heat treated. Tube housing, 2.69" L x .54" D x .34" bore, material, zinc, alloy, die casting. Protective finishes as required. Manufacturing firms bidding this item should be technically staffed with engineers and tool designers familiar with manufacturing processes and Government standards and specification. Procurement contract will specify parts to be furnished as Government Furnished Materials.

04886. FIRING DEVICE, PULL RELEASE TYPE, M3, ASSEMBLY, (LOADED)

Consists of 13 components and 4 assemblies. Body, 2.755" L x .58" D with .377" bore, material, zinc base alloy, die casting. Cord, 2 each, 12' L, curtain fixture No. 2, glazed, commercial, dyed green and mildew proofed Coupling base assembly, 4 component: Base coupling, 1.01" L x .63" D, material, zinc base alloy, die casting. Gasket, .253" L tapered .195" to .161" diameter, material, rubber, type R, class RS, Grade 510B-F7. Cup, shipping, .39" long x .255" I.D. x .031" wall thickness, material, plastic, cellulose, acetate butyrate, type 1, class H2. Primer, percussion, M27 assembly, 5 components: Body, anvil, cup, cup, cover and charged with styphnate, composition primer mixture or alternates. Dial assembly, 5 components and 1 sub-assembly; washer, dial, .50" diameter x .0418" thick x .184" I.D. with 35 degrees V cut. Key dial winding, .35" maximum diameter stepped to minimum diameter .125" with 6 teeth equally spaced below key head x .945" long, material, zinc base alloy, die casting. Knob, dial, .39" diameter x .13" wide, center hole .125" square, knurled, material, zinc base alloy, die casting. Pin, dial release, 1.485" long x .19" head diameter x .142" body diameter, material, steel, bar, round, C1020, cold rolled. Spring,



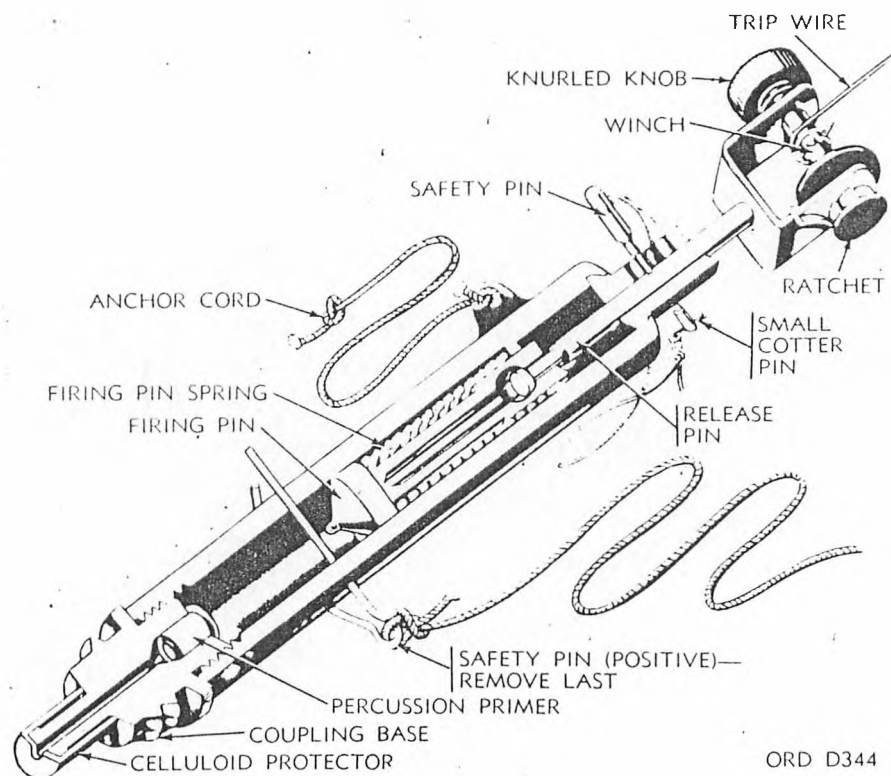




ORD D342

FIRING DEVICE, DEMOLITION, ML (PULS. TYPE)





ORD D344

FIRING DEVICE, M3. (PULL RELEASE TYPE)



.28" maximum diameter x .22" minimum I.D. x .024" wire diameter, 4 coils, material, wire, steel, high carbon, spring, bright, music, heat treated. Dial bracket and pawl assembly, 2 components staked and soldered together: Bracket, dial, "U" shape, .63" long x .38" wide x .0418" thick, material, steel, low carbon, strip. Pawl, dial, "L" shape, .32" long x .13" wide x .020" thick, material, bronze, phosphor, Comp A, strip, temper spring. Head, .485" diameter x .38" body diameter x .585" long, material, zinc base alloy, die casting. Pin, cotter and pin, cotter, safety, split, 2 each, standard. Pin, firing, 1.32" long x .346" diameter, material, brass rod, 3/4 hard. Pin, safety, .975" long x .13" maximum diameter, material, steel, bar, round C1020, cold rolled. Spring, pin, firing, .36" maximum diameter x .275" minimum I.D., 16 coils, square ends x wire diameter .036", material, steel, wire, music, heat treated. Wire spool assembly, 2 components: Spool, ends, 1-1/8" diameter x 1/4" wide x 2-1/16" long with 5/8" center diameter material, wood, soft, pine, commercial. Wire, trip, steel, number 24 W & M Gage (.023") x 80' long, material, steel, form 1, grade FS1005 or 1010, comp. A. Manufacturing firms bidding this item should be technically staffed with engineers, chemists and tool designers, familiar with pyrotechnic manufacturing processes and Government standards and specifications.

11602. FUZE, TRAINING, DEMOLITION, KIT, XM1147

Complete Assembly approximately 3-1/2 inch diameter by approximately 6 inches long assembled. Major Components; Housing, 4.51 inches long by 3.5 inches diameter with center boss 1 inch in diameter, by .60 inch long, three holes drilled and threaded, one hole through center of housing on centerline through boss, x .125 finish all over, material, alloy rod, 2017-T4, 2024-T4, or 6061-T6, ASTM B211. Arming Assembly consisting of the following: Pin Assembly, Stop, Spring, 1.17 inches long by 1.125 inches diameter, outside diameter 1.125-18 UNEF-2A thread, .61 inch long, one end, other end, .76 inch diameter boss by .56 inch long, .645 hole drilled through on centerline, material, aluminum alloy rod, 6061-T4, ASTM B211, 125 finish all over. Spring, Compression, .96 inch maximum outside diameter by .645 inside minimum diameter by .0915 inch wire diameter by 3.093 in free height with 12 total coils, 10 active coils, squared and ground ends, heat treated to remove embrittlement after plating, material, wire, steel, music spring, ASTM A228. Pin, Cotter, MS24665-155. Pin Assembly, consisting of Plunger, Spring, 23/32" long by No. 8, 32-2A outside thread, material, steel, suggested source, Vlier Engineering Corp., Los Angeles, California, part No. S-50. Pin Arming, 3.64 inches long by .96 inch head diameter, .13 inch thick, body diameter .625 inch, threaded one end, .59 inch, .625-18 UNF-2A, with 2 holes, one drilled and one threaded, material aluminum alloy rod, 6061-T4, ASTM B211. Connector, 1 and 7/32" long by 23/32" hexagon, threaded at both ends, material, approved source ITT Cannon Electric, Los Angeles, California, part No. GS02-10SL-4P-302. Cover, Electrical, MS25043-10. All components steel and aluminum are anodic coated or

plated. Special testing is required for fuze functioning 100% and a 40 foot drop test is required on the initial sample. Manufacturing firms quoting should have a highly competent technical staff or metal working processes. This item is considered difficult to produce in accordance with applicable drawings and specifications.

10219. FUZE, BD, XM578, MPTS WITH DETONATOR

Government furnished material, this item is basically the same as Item No. 1 Fuze, BD, M534A1 above with the exception of the following components, Fuze Body, approx. 3.06" long, 1.8" in diameter, a 1.8-12 UNS-2A thread on the O.D. at one end, a 1.48-28 UNS-1B thread followed by a 3 step counterbore to a depth of 2.685" and a diameter of .875" in the opposite end, material, steel, bar, 1137, special quality, Spec. ASTM A107, or A108, cadmium plate with supplementary chromate treatment required, Booster Lead Cup, Cap and Locking Ring, no change in physical configuration on these 3 components but the material for each is changed to steel, bar, 1137, special quality, Spec. ASTM A107 or A108, protective finish of cadmium plate with supplementary chromate treatment required.

10117. FUZE, BLASTING TIME

Safety type, suitable for water-saturated work. Assembly consists of a semisolid train of fine-grained black powder, tightly wrapped and enclosed inner cover, jute and cotton yarns, wound spirally with outer coating of petroleum residue waterproofing material, covered with paper and spirally wound cotton yarns. External coating, smooth finish, double dip in orange colored wax. Size, .2" O.D. x 50' lengths. Special tests, burning rate, waterproofing, flame intensity. Packaging, unit, 2 each, 50' nested coils wrapped in paper, 5 units packages shall be packaged in hermetically sealed metal cans. Spec. JAN-F-360 applies to this item. Qualified personnel familiar with pyrotechnic manufacturing processes and Government specifications are required to produce this item.

09846. FUZE, DEMOLITION KIT, M1134, MPTS WITH DETONATOR, ELECTRIC, M36A1

Complete assembly approx. 3-3/8 inch diameter by 5-5/8 inch long and consists of approx 50 components. Major components, Tube, Center, 3-1/2 inch diameter by 5-5/8 inch long, spool shape, 11/16 inch hole through center, various diameter holes, counterbores, slots, grooves and threads. Material, aluminum base alloy, sand casting, specification, B26 or die cast alloy, specification, SG-100A, ASTM B58. Container, 3-1/2" OD x 3-1/32" ID x 4-1/4" L, x 1.852" W x 1/2" thick, various diameter holes, counterbores and countersinks, material, aluminum alloy, plate, 2024-T4, specification ASTM-B209 or extruded shape ASTM-B221, Retainer, Rotor, 3" D x .230" thick with a 1" hole in the center, various diameter holes, counterbores and countersinks, material, aluminum

alloy sheet, 2024-T4, ASTM-B209 or aluminum alloy bar, 2024-T4, ASTM B211. Guide, Arming, .400" D x 1.6" L with slots, holes, keyway and flats. Material, brass rod half-hard ASTM-B16. Disconnect, Arming Pin 5/8" D x 1-1/2" L with slots, grooves, threads and holes, material, brass rod, half-hard, ASTM-B16. Block, Terminal, Lower 2" L x 5/16" W x .52" H with holes, counterbores and threads, material, plastic, type V or VI Spec L-P-310 or Type DFI-2 or CPI-40, Spec. MIL-A-14 Nut, 1.63" D, .20" thick, 1" 20 UNEF-2B threaded ID, material, aluminum, 2024-T4, ASTM-B209 or Bar, 2024-T4, ASTM B211. M36Al, Detonator, Electric, 532" L x .285 max D with 2 lead wires. Loaded with lead azide type I and PETN Class 4. Tested 100 percent for resistance of bridge and holder assembly. Smaller parts consist of springs, pins, plates, spacers, nuts, washers, bushings, and electrical components. Various aluminum components require anodic coating. Steel components require zinc and cadmium plating, both require salt spray tests from 24 to 96 hour and other rigid tests such as waterproofness, electric continuity in safe and armed position, 40 foot drop test. Manufacturing firms quoting should have a highly competent technical staff for metal working processes. This item is considered very difficult to produce in accordance with applicable specifications.

11029. FUZE, PD, M503A2 DETONATOR AND TETRYL LEAD CHARGE

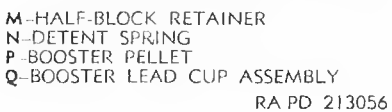
Assembled length is 2.581" x 1.93" O.D. Consists of 8 major components, body 2.258" long x 1.93" O.D. tapered to .555" at nose interior drilled or cast in various steps base end threaded interior and exterior. Material: aluminum alloy, die casting, ASTM-B85, alternate material: cold drawn aluminum rod, alloy 2011-T8, 2017-T4, or 2024-T4, ASTM B211. Alternate material: aluminum die forging alloy, 2014-T4, or 2025-T6, ASTM-B247. Yield strength, 30,000 PSI, tensile strength 50,000 PSI. Firing pin .827" long x .048" diameter, tapered to .015" other end .124" diameter x .071 x .005 chamfer, material: steel wire drawn, 1117, ASTM-A108, alternate material: steel wire drawn, 1117, ASTM-A510. Head firing pin .25" long, one end drilled to a depth of .095" x .125" diameter hole drilled through center .005" diameter x .165" long, material, aluminum alloy wire, drawn, alloy 2011-T3, ASTM-B211. Other components, disc closing, washer closing disc, cup support. Retainer rotor .664" long, .740" diameter shoulder, .327" diameter one end x .415" diameter at other end, one end drilled or formed .48" depth x .29" diameter hole at other end .061" diameter x .180" long. Material: aluminum die casting, alloy SC 84A, SC 84B, SC 12A or SC 12B ASTM B85, alternate material; aluminum alloy rod, alloy 2011-T3, 2017-T4, or 2024-T4, ASTM B211. Housing 1.033" long x .920" diameter one end drilled to a depth of .7043" x .566" diameter other end drilled .200" diameter, various grooves machined on the exterior, exterior on base end threaded and 2 wrench holes drilled .155" diameter x .08" deep. Material aluminum alloy rod, 2017-T4, 2024-T4, or 2011-T3, ASTM B211. Other components are retainer half black, spring detent, pin detent spring







- A-BODY
- B-FIRING PIN
- C-FIRING PIN HEAD
- D-SUPPORT CUP
- E-ROTOR RESTRAINER
- F-ROTOR RESTRAINER SPRING
- G-ROTOR HOUSING
- H-ROTOR
- J-DETONATOR
- K-SETBACK SLEEVE
- L-SETBACK SPRING





detent sleeve set back and spring set back. Rotor .518" diameter .242" forging alloy, naval brass, ASTM B283 alternate, naval brass alloy A, ASTM B21. Detonator stab, M42 .436" long x .241" diameter, consists of cup detonator, disc detonator, upper charge or primer mixture, intermediate charge of lead azide, lower charge of tetryl. Cup booster .648" high x 1.188" diameter, exterior on open end threaded, material aluminum alloy, ASTM-B209 alternate material: aluminum alloy, bars, rods and wire alloy 2014-T4, 2017-T4 or 2024-T4 ASTM B211 or 2024-T4 ASTM B211. Other components in this item are cushion detonator, cup booster lead, disc closing booster. This item is considered difficult to manufacture. Firms bidding this item must have qualified engineers and tool designers to produce to applicable specifications.

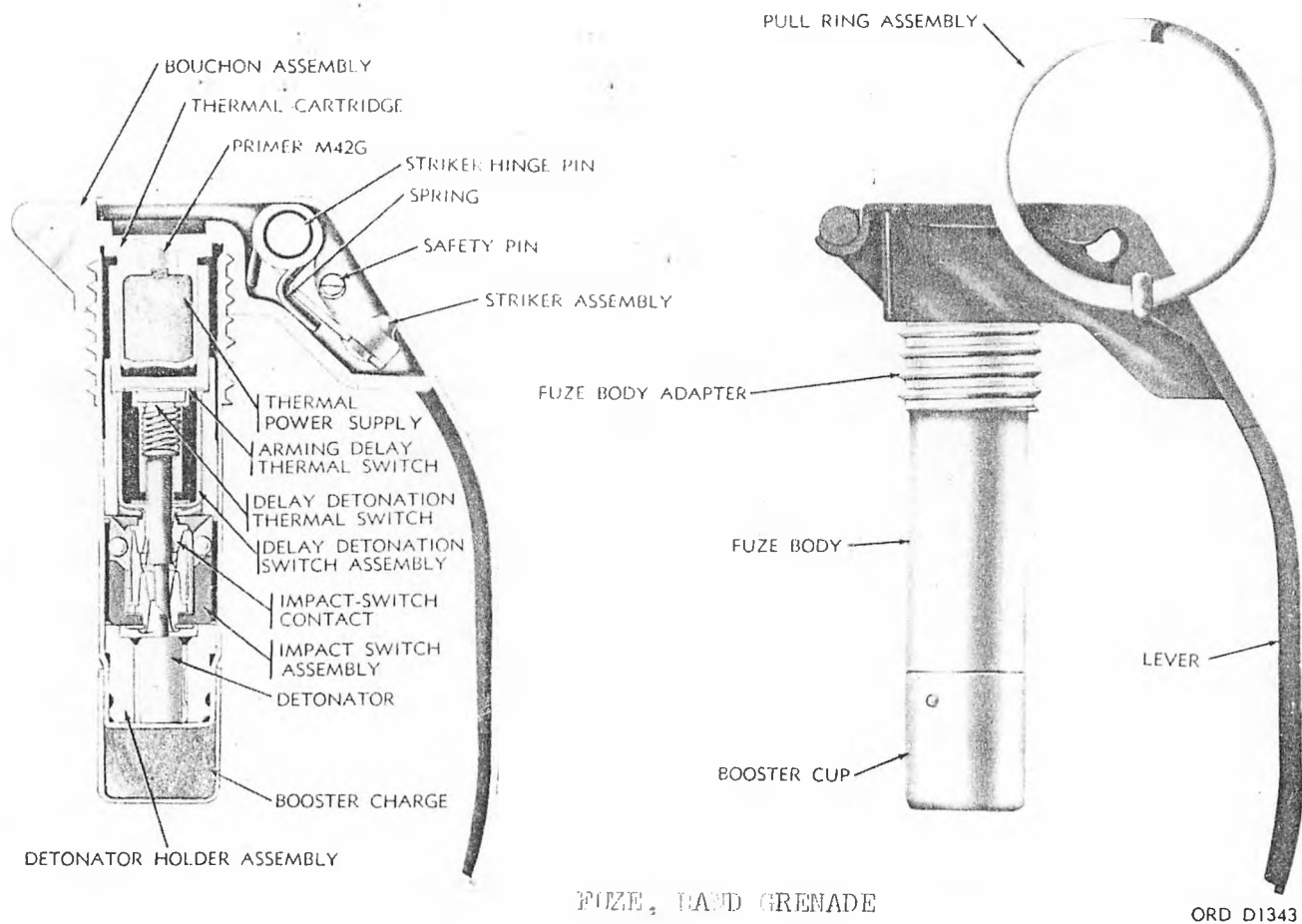
05374. FUZE, GRENADE, HAND, M204A2

Consists of 11 components and 5 assemblies. Body, approx. 2.3" high x .81" wide x 1.7" long, material, zinc base alloy die casting, AG40A or AC41A, ASTM B86 or aluminum alloy, die casting, ASTM B85. Lever, formed shape, approx. 4.0" long curved section by right angled tip section approx. 1.7" long x 24 Ga thick, material, steel, strip, CR, T3. Pull ring assembly, 2 components, cotter pin steel wire, type B, 1-1/8" long. Ring, pull, 1 1/2 coils, close wound, 1 1/4" diameter x .106" diameter, material, steel, wire, WD1020. Washer, .75" O.D. x .52" I.D. x .078" thick, material, rubber, vulcanized, class RS910Af2. Detonator assembly, 4 components, Case, detonator, 1.78" long x .243" O.D. x .035" wall thick, material, aluminum, alloy, strip, 5052 ASTM B209. Charge, igniter, lead styphnate, Charge upper, lead azide, lower, RDX, type A or B, or PETN, Class 4. Primer holder assembly, consists of 2 components, Holder, primer, .472" diameter x .150" wide with concentric center holes .173" and .10" diameter. Primer, percussion, M42 assembly, .1756" diameter x .119" long with 3 components, cup, anvil and cover. Charged with PA-101 primer composition or alternates. Striker assembly, consists of 4 components. Striker, hinge shape, .494" wide x .28" high x approx. .79" long, material, steel, strip, ASTM A109. Point, striker, 5/16" diameter x .25" long, material, steel, bar, 1117, 1113, 1120, cold finished, ASTM A108. Pin, hinge, .67" long x .157" O.D. material, steel, bar, 1018 or 1020, cold finished, ASTM A108. Spring, .42" long x .28" diameter, steel, wire, .04" diameter, music, ASTM A228. Protective finish, cadmium or zinc plate. Manufacturing firms bidding this item should be technically staffed with engineers, chemists and tool designers familiar with pyrotechnic manufacturing processes. This item is considered somewhat difficult to produce to standards and specifications.

05378. FUZE, GRENADE, HAND, PRACTICE, M205A2

Consists of (11) components and (5) assemblies. Body approx. 2.3" high x .81" wide x 1.7" long, material, zinc base alloy die casting, AG40A or AC41A, ASTM B-86 or Aluminum alloy, die casting, ASTM B-85.





FUZE, LAND GRENADE



Lever, formed shape approx. 4.0" long curved section by right angled tip section approx. 1.7" long x 24 Ga thick, material, steel, strip, CR, temper 3. Pull ring Assy (2) components, Cotter pin, steel, wire, type B 1-1/8" long. Ring, Pull, 1 1/2 coils, close wound, 1 1/4" diameter x .106" diameter, material, steel wire, WD 1020. Washer, .75" O.D., x .52" I.D., x .078" thick, material, rubber, vulcanized, class RS910AF2. Igniter Assy, (2) components. Case, Igniter, 1.78" long x .243" O.D. x .243" I.D. x .035" wall thick at base, material Aluminum alloy, strip, 5052, ASTM, B209. Charge, black powder. Primer Holder Assy consisting of (2) components, Holder, Primer, .472" diameter, tapered, x .150" wide with concentric center holes .173" and .10" diameter. Primer, Percussion M42 Assy, .1756" diameter x .119" long with (3) components, cup, anvil, and cover. Charged with PA-101 primer composition or alternates. Striker Assy consisting of (4) components. Striker, hinge shape, .494" wide x .28" wide x approx. .79" long, material, steel, strip, S-1007 cold rolled. Point Striker, 5/16" diameter x .25" long, material, steel, bar, 1117, 1113, 1120, cold finished, ASTM-A108. Pin, Hinge, .67" diameter x .157" long, material steel, bar, 1018 or 1020, cold finished, ASTM A108. Spring, .42" long x .28" diameter, steel, wire .04" diameter, music, heat treated. Protective finish, cadmium or zinc plate. Manufacturing firms bidding this item should be technically staffed with engineers, chemists and tool designers familiar with pyrotechnic manufacturing processes. This item is considered somewhat difficult to produce to Ordnance standards and specifications.

05380. FUZE, GRENADE, HAND, M206A2

Consists of 11 components and 5 assemblies. Body, approx. 2.3" high x .81" wide x 1.7" long, material, zinc base alloy, die casting, AG40A or AC41A, ASTM B086 or aluminum alloy, die casting, ASTM B-85. Lever, formed shape, approx. 4.3" long curved section x right angled tip section approx. 1.7" long x 24 G thick, material, steel, strip, ASTM A-109. Pull ring assembly, 2 components: Cotter pin, steel wire, type B 1-1/8" long. Ring, pull, 1-1/2 coils, close wound, 1-1/4" diameter x .106" diameter, material, steel wire, WD 1020. Washer, .75" O.D. x .52" I.D. x .035" wall thickness, material, aluminum, alloy, strip, 5052, ASTM B-209. Charge Igniter - lead styphnate. Charge, upper - lead azide. Charge, lower - RDX, type A or B, or PETN, Class 4. Primer holder assembly, 2 components: Holder, primer, .472" diameter x .150" wide with concentric center holes .173" and .10" diameters. Primer percussion, M42 Assembly, .1756" diameter x .119" long with 3 components: Cup, anvil and cover. Charged with PA-101 primer composition or alternates. Striker assembly, 4 components: Striker, hinge shape, .494" wide x .28" high x approx. .79" long, material, steel, strip, S-1007, cold rolled. Point, striker, 5/16" diameter x .25" long, material, steel, bar, 1117, 1113, 1120, cold finished, ASTM-A108. Pin, hinge, .67" diameter x .157" long, material, steel, bar, 1018, or 1020, cold rolled, ASTM A-108. Spring, .42"



long x .28" diameter, wire .04" diameter, music heat treated. Protective finish, cadmium and zinc plate. Manufacturing firms bidding this item should be technically staffed with engineers, chemists and tool designers familiar with pyrotechnic manufacturing processes. This item is considered somewhat difficult to manufacture to Government standards and specifications.

10613. FUZE, HAND GRENADE, M217

The M217 Grenade Fuze is an electric fuze that functions either on impact or after a lapse of from three to seven seconds from the time the lever is released (over-riding time). The M217 fuze is used with the M26A2 Hand Grenade. The arming delay time of from one to two seconds which is the time required for the Thermal-Arming Switch to melt and close a circuit to both the Impact Switch and the Delayed Functioning Switches. The Impact Switch closes to explode the grenade regardless of the angle at which the grenade hits, but if impact occurs before the fuze is armed, or if no impact occurs, the delayed functioning feature operates to actuate the fuze. The Principal components of the M217 fuze are the: Bouchon Assembly, Thermal Battery, Thermal Arming Switch, Impact Switch, Thermal Delayed-Functioning Switch, Electric Detonator and a RDX Booster Pellet. All of the above principal components are assembled in a steel case 2.7" in length and 0.57" in diameter with an over-all weight of 2.68 ounces. The Bouchon Assembly consists of a Pull Ring, a Safety Pin, a Striker, a Hinge Pin, a Striker Spring, a Bouchon Body and a Lever. The fuze is hermetically sealed. Activation of the Thermal Battery raises the temperature of the electrolyte to a point at which the battery can deliver electrical energy to fire the detonator. The primer is a percussion type M42G. The detonator model number is the T77 electric. Temperature limits (operational) - 40°C to 52°C. storage -54°C to 71°C. Hand Grenade used is the M26A2 Fragmentation. The supplier of the thermal battery should be one that has considerable experience in the manufacture of a highly reliable product.

10404. FUZE, MT, M562

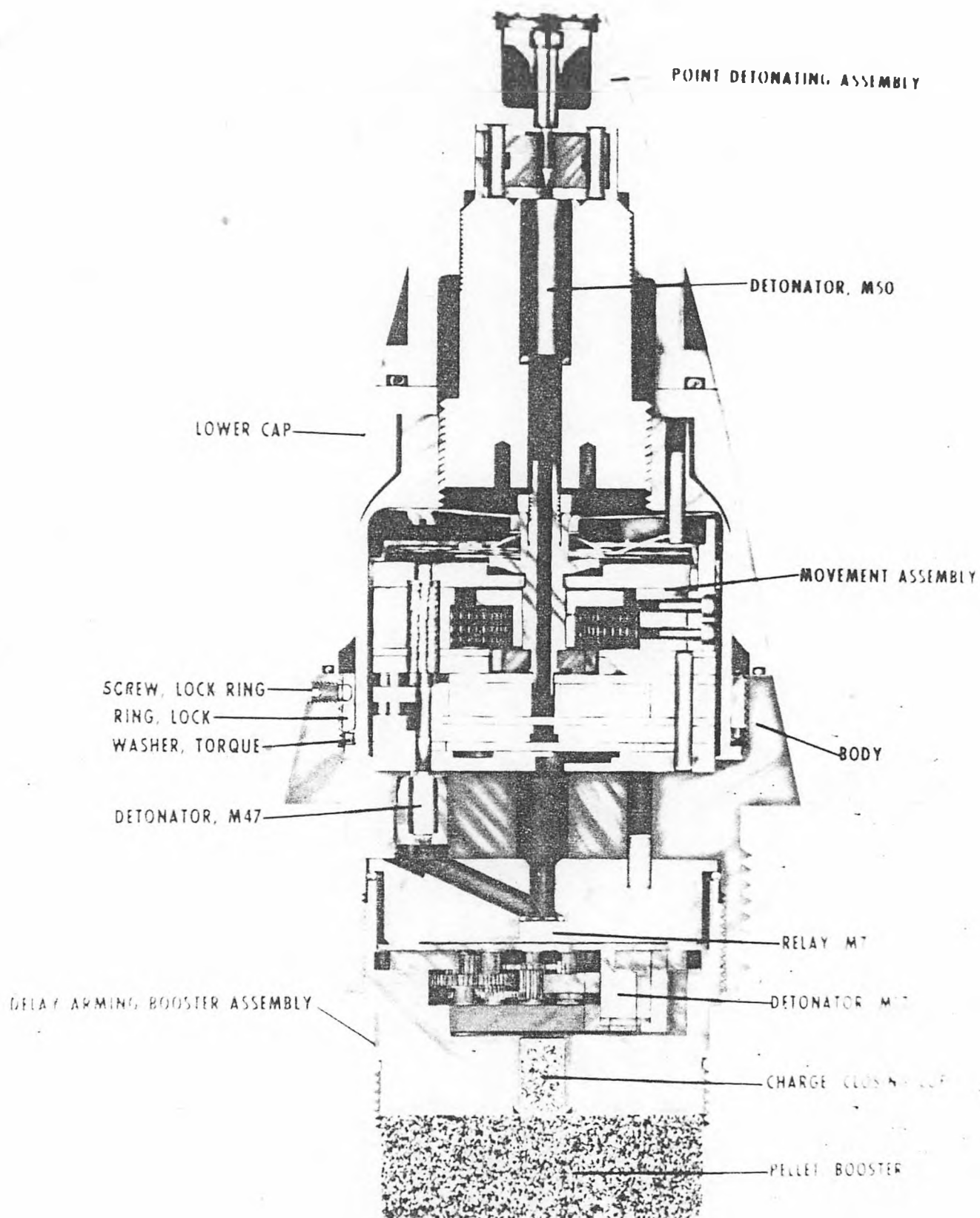
Is 4.66" long, 2.4" diameter and consists of (98) different component parts, Procured Detonator and Relay loaded. Major components, Body, 2.4" diameter x 1.53" length x 2" O.D., 12 thread one end and 1.74" I.D., 20 thread one end. Series of precision holes, counterbores, slots and angles, material, brass. Housing, 1.884" diameter x 1-5/8" long x 1" I.D., 20 thread one end, 1.67" diameter, counterbore 1.167" deep one end, precision holes and slots, material, 416 stainless steel. Cap, lower, Frustum cone shape, 2.09" diameter to 1.58" O.D. x 1.35" length with precision holes, counterbores and slots, O.D. engraved "O" to 100 seconds, material, aluminum 2014 or 2024-T6. Head, 1.61" diameter x 2.27" long, projectile shape, 1" O.D., 20 thread, one end, with slots and grooves, material, aluminum 2024-T4 or aluminum die casting.

Ring, Lock, 1.937" O.D., 24 thread, .27" length, 1.775" I.D. with slot one end, material, stainless steel 416. Plug, Closing, 1.65" O.D. x 7/16" length with precision holes and counterbores, material, aluminum 2024-T4 or aluminum die casting. Retainer, 1.74 O.D., 20 thread .517" long with precision holes and counterbores, material, aluminum 2011-T8 or zinc base die casting. Housing (mainspring) 1.669" diameter x .90" I.D. x .296" length with precision holes, counterbores and slots, material, Aluminum 7075-T6. Plate, Lamina, (9) each of which (6) are aluminum 2024, 1.612" diameter each with varying thickness from .040" to .157" with precision holes, counterbores, slots, grooves and thread holes (3) each 1.612" diameter with varying thickness from .0399" to .096", all have precision holes, counterbores, slots, grooves and thread holes.

05365. FUZE, MTSQ, M564

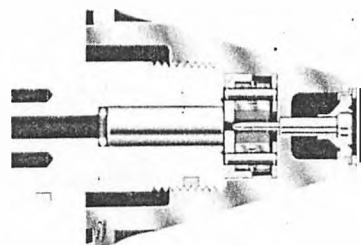
Approx. 2.4" maximum diameter x 5.816" long, procured detonator and relay loaded, complete assembly consists of approx. 166 component parts. Major components, Body, 2.40" diameter x 1.53" long with various counterbores, threads, holes and slots, material, brass Spec. MIL-B-13351 or QQ-B-637, Ring, Lock, 1.775" I.D. x .27" long with 1-15/16" 24 thread on O.D. with two .20 slots one side, material, stainless steel 416, QQ-B-763, Head, 1.785" long, 1.610" O.D. tapers to approx. 0.55", several counterbores and a .8125 -28NS - 2B thread, material, aluminum alloy 2024, Temper T4, Spec. QQ-A-268, alternate material, aluminum alloy die casting, Spec. QQ-A-591, Adapter, 1.377" long x 1.00" in diameter, 1.00-20UNEF-2A thread on one end with a .8125 -28NS-2A thread on opposite end, material, aluminum alloy 2024, temper T4, Spec. QQ-A-268 or aluminum alloy 7075, temper T6, Spec. QQ-A-282 or aluminum alloy die casting, Spec. QQ-A-591, Cup, Booster, .825 long x 1.703" O.D., 1.536" I.D., .761 deep, 1.600 -20NS -2B-LX thread in mouth of cup, material, aluminum alloy, 3003-N14, Spec. ASTM E209 or aluminum alloy, composition 6061F, Spec. MIL-A-12545, Plug Closing, 1.655" diameter x .395" long with various holes and counterbores, material, aluminum 2024-T4, Spec. QQ-A-267 or QQ-A-268 or Temper 351 or QQ-A-268 or aluminum die casting, Spec. QQ-A-591, Housing, 1.884" diameter x 1.625" long, 1.67" counterbore 1.167" deep with various holes and a 1.00" 20 thread inside one end, material, stainless steel 416, Spec. QQ-S-763, Cup, Lower, 2.185" diameter tapered to 1.585" small end with various size holes and counterbores, O.D. is graduated from zero to 105, material, aluminum 2014-T6, Spec. QQ-A-261 or 2024-T4, QQ-A-267 or 268, Body, 1.74" diameter x 1.123" long, various counterbores, precision holes 1.74" 20 thread on outside, also 1.60" 20 thread one end, material, brass, free machining, Spec. MIL-B-13351 or brass, Composition 3, half hard, Spec. QQ-N-35. Other small components such as gears, pinions, shafts, screws, plates, springs, discs, collars, pins, bushing, and "O" rings. Sub-assemblies and assembly must withstand a series of rigid tests including arming, non-arming, jolt, jumble, transportation-vibration, temperature-humidity, waterproofness, 40 foot



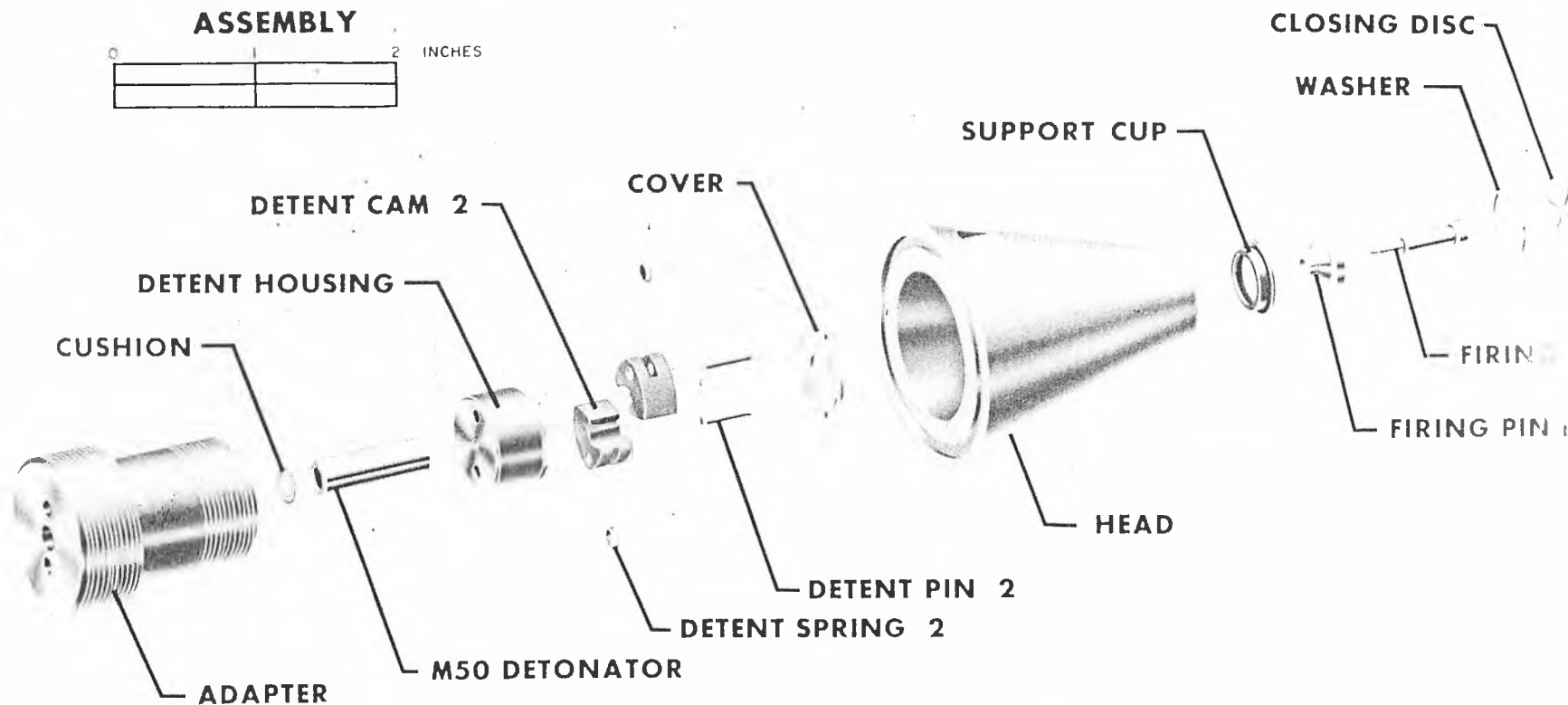
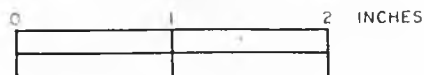


FUZE MTSQ, M564





**ASSEMBLY**



## POINT DETONATING ASSEMBLY M564 FUZE



drop, dynamic regulation at 6000 RPM so that time error is 0.18 percent maximum from 2 to 100 seconds at the specified frequency, ballistic tests also required. Manufacturing firms will require a highly competent technical staff of engineers, metallurgists, technicians, tool engineers to design and maintain precision tools for mass production of precision parts. Contractor shall provide and maintain an effective quality assurance system in accordance with Spec. MIL-I-45208. This item is considered extremely difficult to produce in accordance with applicable specifications.

05810. FUZE, MT, XM565

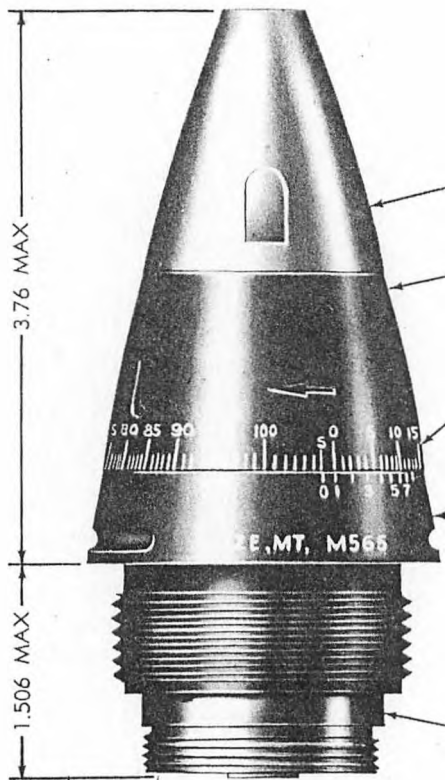
Approx. 2.4" diameter x 4.66" long, procured detonator loaded, complete assembly consists of approx. 149 component parts with approx. 76 sub-assemblies. Major components, Body, 2.40" diameter x 1.53" long with various counterbores, threads, holes and slots, material, brass, Spec. MIL-B-13351 or QQ-N-35. Ring, lock, 1.775" I.D. x .27" long with 1-15/16" 24 thread on O.D. with two .20 slots one side, material, stainless steel 416, QQ-S-763. Head, 1.61" diameter x 2.27" long tapered to .55" diameter with 1.00" 20 thread opposite end, material, aluminum 2024-T4, Spec QQ-A-267 or QQ-A-268 or aluminum die casting, Spec. QQ-A-591 Housing, 1.884" diameter x 1.625" long x 1.67" counterbore 1.167 deep with various holes and 1" thread inside one end, material, stainless steel 416, Spec. QQ-S-763. Cap, Lower, 2.185" diameter tapered to 1.585" small end with various size holes and counterbores, O.D. is graduated from zero to 105, material, aluminum 2014-T6, Spec. QQ-A-261 or 2024-T4, QQ-A-267 or 268. Body, 1.74" diameter x 1.123" long, various counterbores, precision holes 1.74" diameter 20 thread on outside, also 1.60" 20 thread one end, material, brass free machining, Spec. MIL-B-13351 or brass, Comp. 3, half hard, Spec. QQ-N-35. Other small components such as gears, pinions, shafts, screws, plates, springs, discs, collars, pins, bushings, and "O" rings. Sub assemblies and assembly must withstand a series of rigid tests including arming, non-arming, jolt, jumble, transportation-vibration, temperature-humidity, waterproofness, 40 feet drop, dynamic regulation at 6000 RPM so that timing error is 0.18 percent maximum from 3 to 100 seconds at the specified frequency, ballistic test also required. Manufacturing firms will require a highly competent technical staff of engineers, metallurgists technicians, tool engineers to design and maintain precision tools for mass production of precision parts. Contractor shall provide and maintain an effective quality assurance system in accordance with Spec MIL-I-45208. This item is considered extremely difficult to produce in accordance with applicable specifications.

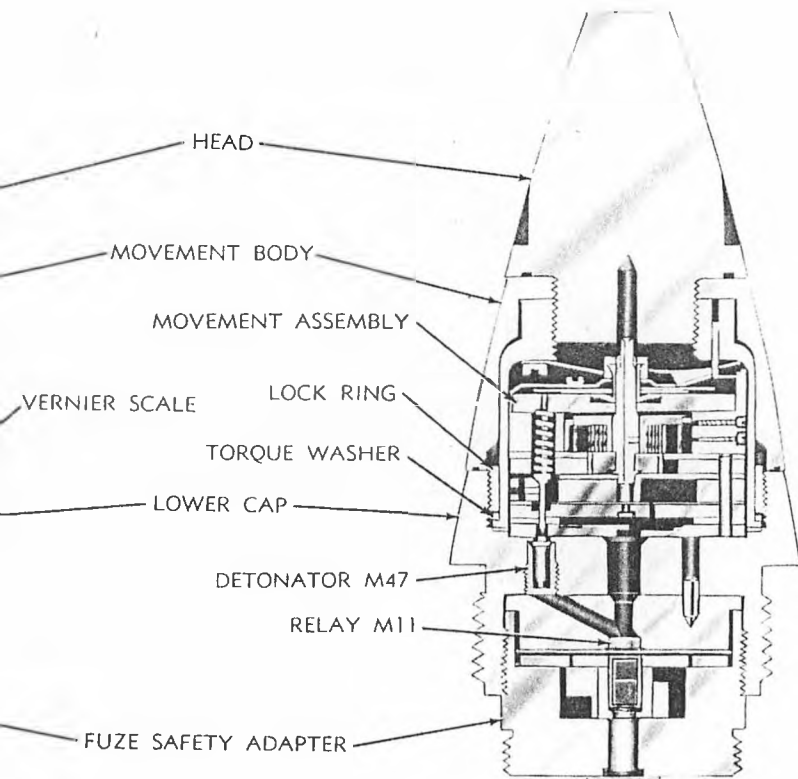
11199. FUZE, XM429

The XM429 Fuze is a proximity type employing a radio frequency Doppler principal. The fuze consists of a PS 113A Power Supply (a thermal battery), a safe and arming device ("G" weight, mechanical escapement,









ORD D1373



M77 Electrical Detonator) and an Electronic head (three transistors, intergrated circuit, impact switch). Testing and qualifying the first article as well as production testing is critical and requires a complete staff of extremely capable Electronic Engineers cognizant of high frequency electromagnetic radiation principals. This fuze is considered extremely difficult to manufacture. Confidential or higher clearance is required to obtain procurement package for this item.

05635. FUZE, ROCKET, M412

Procured with explosive loaded detonator electric M48 and primer stab-T96, 1.86 maximum inches in length x 1.245" diameter at the base. Assembly consists of 69 component parts shown on 80 ordnance drawings, including assembly drawings with (38) applicable specifications. Five(5) major components consist of base mounting is approx. 1.245" diameter x approx. .636" long, various drilling, milling, tapping, forming of slots, holes and deburring is required on this part, porosity requirements in sidewall of the firing pin hole shall be in accordance with MIL-F-60005 paragraph 3.4. Material: aluminum base alloy, die casting, Class 10, Spec. QQ-A-591, alternate material: aluminum alloy, rod, temper 3, Spec. QQ-A-365. Minor components is base mounting consists of weight, spring retaining, pin firing, spring firing pin, plug base, and screw base, springs shall not break when extended or distorted to the point of minimum permanent distortion. Support rear is approx. 1.058" long x approx. .666" wide x approx. .032" thick, holes and slots in piece may be formed at time of pressing, material: cold-rolled carbon steel strip, No. 2 finish No. 4 or 5 temper, ASTM A10S. Minor components assembled to support is bushing, pinion hear, stud pallet, and wheel star. Rotor is approx. 1" long x approx. .625" diameter, various drilling, milling, tapping, forming of slots and deburring is required on this part. Material: aluminum alloy, rod, temper T3, Composition A, Spec. QQ-A-365, minor components assembled to the rotor are gear rotor, rotor contact, screw contract, pin rotor, insulator rotor, washer, screw set, rivets, detonator, electric, M48 assembly, primer stab, T96 assembly. Support setback is 1.144" maximum x approx. .893" x approx. .032" thick, various angles, slots and holes may be formed at time of pressing. Material: cold-rolled carbon steel strip, No. 2 finish, No. 4 or 5 temper ASTM A109, minor components assembled to support setback are leaf No. 1, 2 and 3, contact ground, rivet spring ground, spring leaf No. 2 and 3, stud leaf No. 1, 2 and 3, washer stud, telltale inner contact, telltale insulator, telltale insulator bushing, telltale rivet, setback assembly to be assembled to rotor assembly and rear support assembly, assembled to rotor assembly and setback assembly with screws. Base plate and rotor assembly secured with screws. Testing of all phases of fuze must comply with applicable paragraphs of Mil-F-60006, dated 13 November 1963. Testing of primer stab, T96 shall comply with MIL-P-14137A, 12 December 1963. Testing of detonator electric, M48 shall



FUZE, ROCKET: M412 SERIES

LEAD WIRE

CONDUIT

NOSE CAP ASSEMBLY (CONTAINS  
PIEZOELECTRIC ELEMENT)

ORD D498

FUZE, ROCKET: M412



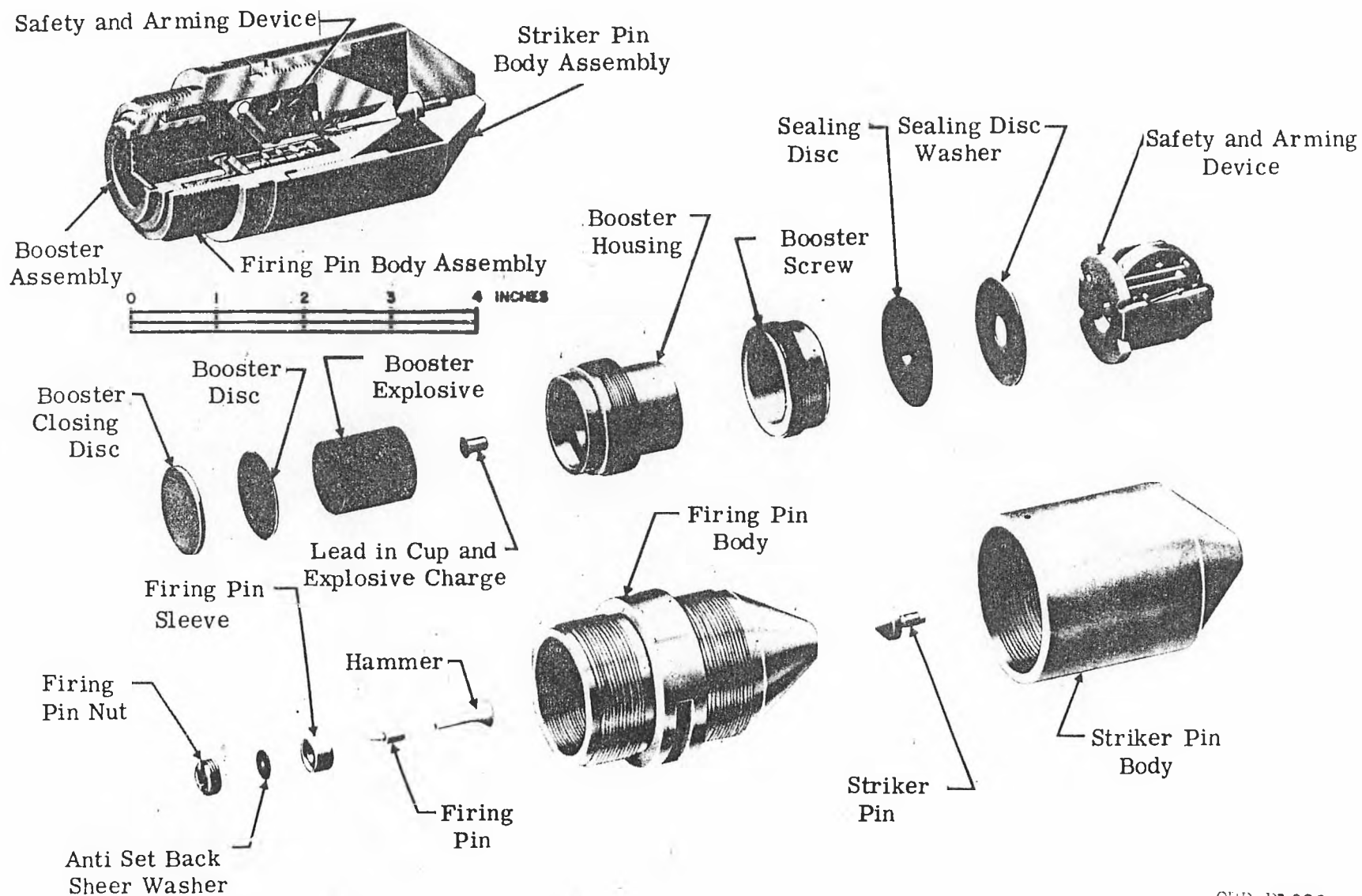


comply with MIL-D-13684C, 12 December 1963. Cover is 1.245" minimum diameter x approx. 1.233" long, various shapes and holes may be shaped at time of forming, material: cold-rolled carbon steel strip, No. 2 finish, No. 4 or No. 5 temper, ASTM A109. Minor components assembled to cover consist of plate cover attached to cover by silver brazing to be visible 360 degrees on this joint, cup attached to plate by silver brazing, 2 each bracket mountings to be attached inside cover by spot welding and silver brazing, window, ring window and gasket window attached by crimping 360 degrees, spot weld and silver brazing, shield terminal, terminal, gasket terminal, bushing insulating, contact cover, to be attached by riveting. Manufacturing firms bidding this item should be technically staffed with engineers, chemists and tool designers and metallurgists to mass produce quantities normally required by ordnance. This item is very difficult to manufacture and assemble to stay within applicable specifications.

10155. FUZE, ROCKET, M423 & XM427 W/SET, MK59, MODEL O W/PRIMER

4.035" maximum length x 1.75" diameter, consists of five (5) major components, Striker, Pin Body Assembly, 2.56" long x 1.75" O.D., 1.74 basic taper per inch on diameter at nose end. Base end machined to a depth of 1.78" x 1.369" diameter x 1.69" diameter wall thickness varying from .025" to .182" with threaded interior of base, interior of nose end machined varying from .128" to .343" diameter for assembly of pin striker, material, aluminum alloy, 2024, Temper T351, rod, ASTM-B211, protective finish, Finish Number 4.3 followed by Finish Number 7.3 of MIL-STD-171. Firing Pin Body Assembly, 2.859" long x 1.75" diameter, 1.140 basic taper per inch on diameter at nose end, interior drilled to a depth of 1.873", diameters varying from .261" to .330", 1.035" and 1.111". Threaded portions consist of threads on exterior at each side of Collar, wrench slot in collar is machined .18" diameter x 1.45" long, interior threaded at nose end and base end. Nose end to be assembled with hammer, pin, sleeve, washer and nut, body to be staked securely into slot of nut, 2 places, 180 degrees apart. Material, aluminum alloy, 2024, Temper T351, rod, ASTM-B211, protective finish Number 1.4.3, 0001 minimum thickness followed by Finish Number 1.8.1, Type I, approx. .00010 thickness of MIL-STD-171. Device, Safety and Arming, consists of 33 metal parts, detent, gear escapement, pinion escapement, lever, pallet lever, shaft lever, gear Number 1, pinion Number 1, gear Number 2, pinion Number 2, bridge wheel escape, pillar, plate inner, rivet bridge, plate outer, spring lock, lock paring stud, spring detent, stud stop rotor, housing rotor, spring stud, pin hinge rotor, gear annular, pin roller lock, roller lock, stud banking, stud gear annular, assembly screw Number 1, assembly screw Number 2, spring set back weight setback weight, wash sealing disc. Detonator MK59, Model O, consisting of cup, closure discs, tetryl, lead azide, Primer, M104 consists of cup, closures, lead azide and priming mixture. All components of Device, Safety and Arming are to be assembled in accordance with applicable ordnance drawings and specifications. Screw

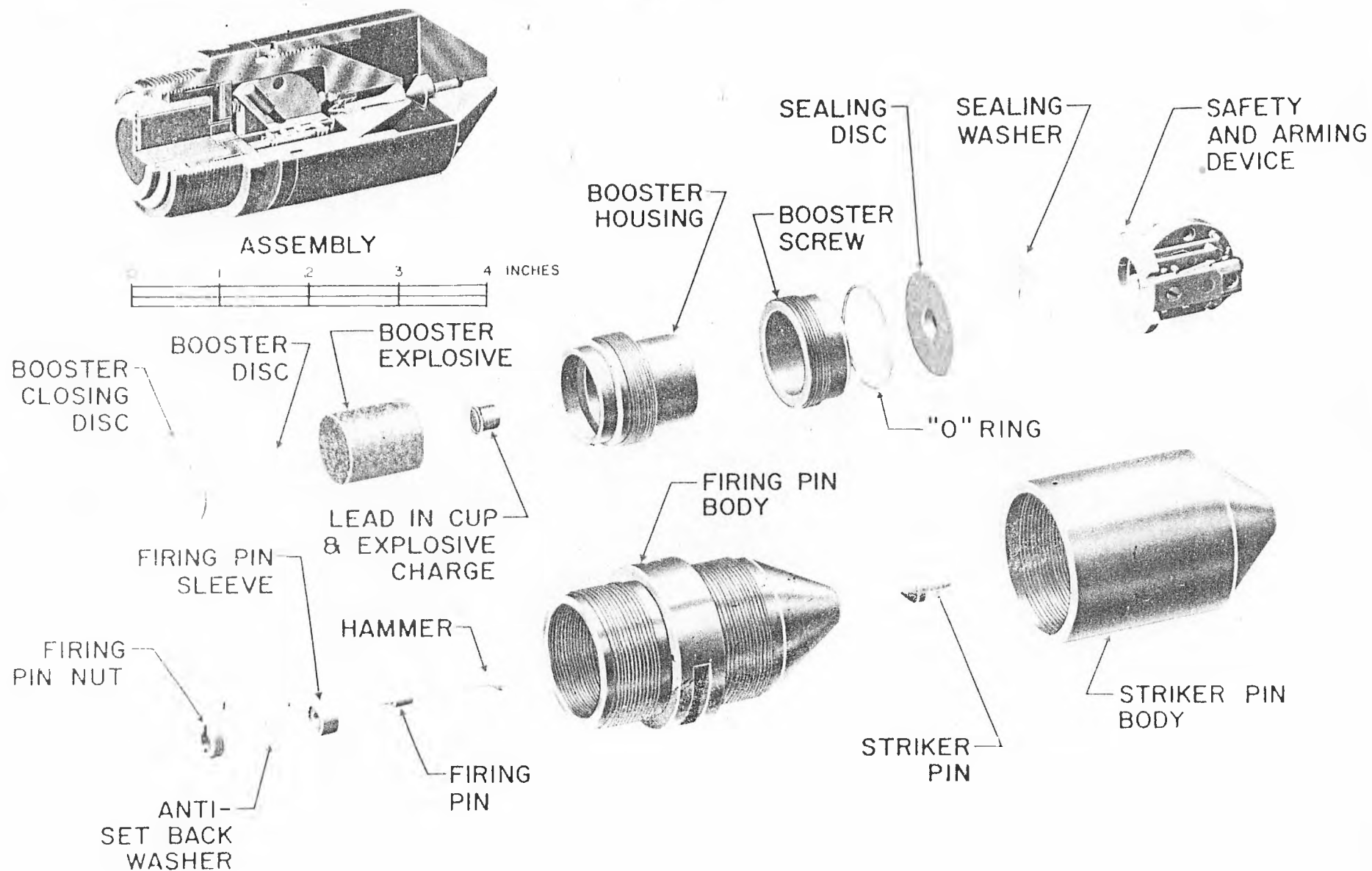




FUZE, ROCKET, M423

ORD D1020





# M 427 ROCKET FUZE



sealing disc .484" high approx. 1.102" diameter, two wrench slots cut on top .062" wide x .052" deep, 180 degrees apart and threaded on one end. Material, aluminum, rod, alloy 2024, Temper T351, ASTM-B211. Housing Booster, approx. 1.115" long x varying outside dimensions of approx. .31" at small end to .889" on body and 1.092" at threaded end, wrench slots cut on threaded end 180 degrees apart, inside dimensions machined to a depth of approx. 1.115" x .240" x .745" x .890". Material, steel, carbon, bar, hot-rolled, Grade B1112, B1113, 1212 or 1213, ASTM A-107, protective finish Number 1.1.1.2 or 1.9.1.2 of MIL-STD-171. Washer, Sealing Disc, 1.110" diameter x .026" thick with center hole .520" diameter, material, steel, strip, ASTM A-109. Cup, Lead In, .248" long x .240" O.D., wall thickness .005", material, copper, sheet or strip, soft, ASTM-B152. Packing, Preformed "O" ring, MS-28775-022. Freon-12, product of E.I. DuPont De Nemours and Company is to fill S&A cavity prior to assembly of washer, sealing disc, "O" ring and screw sealing. No leakage permitted when tested in accordance with applicable specifications. Manufacturing firms bidding this item will require a highly competent staff of engineers, metallurgists, chemists and tool design engineers to design, fabricate and maintain precision tools required for mass production of this item. This item is considered difficult to produce to applicable specifications.

05775. FUZE, PD, M524A5, METAL PARTS

6.01" long x 2.408" maximum O.D. contains 64 components. Major assemblies and components thereof are Body and Striker Assembly consisting of 15 components containing Body, truncated cone 4.202" long x 2.408" maximum O.D. tapered to a minimum of 0.85" through a 22" basic radius, 2-12UNS-1A thread and a 1.6-20UNS-23 LH thread on the large end, bored and counterbored on I.D. material, aluminum alloy rod, 2011-T3, or 2024-T4, ASTM-B211, alternate material, aluminum alloy die forging. 2024-T4, ASTM-B247, Spring, Striker, solid height 0.7" maximum. .407 maximum O.D., advisory wire diameter .038", material, music wire, ASTM-A228, and Striker, 2.06" long x .752" O.D. with a .99" diameter shoulder approx. .257" deep, material, aluminum alloy rod, 2011-T3 or 2024-T4, ASTM-B211, alternate material, aluminum alloy die forging, 2014-T4, ASTM-B247. Pull wire Assembly, consists of 3 components, Wire, Pull approx. 4" long with a Pin, Set-back Safety, 1.32" long, both components .062" in diameter, material, music wire, ASTM-B228, and Pin, Plunger Safety, 1.56" long x .125" in diameter with a Number 4 /.111/-40NC thread, material, aluminum alloy .6061, Temper T-6, ASTM-B211. Plunger, 1.237" long x .998" maximum O.D., various bores, counterbores, angular holes, radii, and a gear segment, material, brass, sintered metal powder structural parts, Class B, ASTM-B282, alternate material, free-cutting brass rod, half-hard, ASTM-B16. Arming Mechanism Assembly, a device to control arming time contains 41 parts, major components are Body, Arming Mechanism, 1.504" long x 1.500" O.D., various holes, cavities, countersinks, counterbores and radii, material, aluminum alloy rod, 2011-T3 or 2024-T4, ASTM-B211,

alternate material, aluminum die forging, 2014-T4, ASTM-B247, Drive Spring, approx. 38" long, .125" wide and .010" thick wound to form 11 coils in a 1.25" diameter, torque requirements, material, steel carbon strip, 1095, spheroidize annealed type, Spec. QQ-S-777, Timing Device Assembly, contains 15 components consisting of wheels, pinions, balance, pallet, shafts, upper and lower frame and rivets, Setback Device Assembly contains 14 components consisting of front and rear frame, springs, shafts, levers and pins, the material in the above two assemblies includes corrosion resisting steel wire, brass strip and rod, sintered brass, music wire and steel strip, Rotor Assembly, contains 4 components consisting of a stop pin and spring Rotor, .600" long x .939" O.D. with various drilled holes and counterbores, material, free-cutting brass rod, half hard, ASTM-B16, and Gear Timing, ring gear, .1040" thick with 50 teeth covering 277 degrees of the .8375" O.D., .8125" theoretical pitch diameter, material, brass strip, alloy number 6 or 8, hard, ASTM-B36, alternate material, leaded brass strip alloy number 4, 5 or 6, half-hard, ASTM-B121, or free-cutting brass rod, half-hard, ASTM-B121. Other major components of the fuze are Cup, Booster, 1.659" long x 1.48" O.D. with a 1.6-20UNS-A LH modified threaded on the upper .38" of the rim, wall thickness varies from .079" on the side to .116" on the bottom, material, aluminum alloy, cold chamber process, die casting, composition SG 100A or SC 84A, ASTM-B85, Liner, Booster, cup shape, 1.32" in diameter x 1.205" deep, .020" material thickness, material, aluminum alloy sheet, 1100-0, ASTM-B209. The fuze must meet arming delay requirements striker load and torque tests; pull test on setback device and a plunger safety pin retention test. This item is considered difficult to manufacture.

11038. FUZE, PD, M533 LESS BOOSTER

This fuze is 1.602" in D and 1.556" L. There are approx. 40 parts to a fuze consisting of plates, shafts, pins, pinions, springs, gears, rotor, spacers, adapters, and seals. These parts are made by stamping, punching, drilling, reaming, coining, tapping, and knurling. They are made of steel, brass, and aluminum. The fuze must be completely assembled to rigid ordnance specifications and assembly is subject to following tests: jolt and jumble, transportation and vibration, water-proofing, arming and non-arming. The fuze is procured with detonator and lead charge installed. This item is considered very difficult to produce to ordnance requirements. Firms manufacturing this fuze will require a highly competent technical staff of engineers to design and maintain precision tools to produce in quantities normally procured.

05813. FUZE, PD, M551, LESS BOOSTER

This fuze is procured with Detonator and lead charge loaded into the Fuze. Fuze is approx. 1.325" diameter x 1.818" long, consisting of approximately 40 component parts and numerous applicable specifications. The assembly consists of plates, shafts, pins, pinions, gears, springs,



retainers, rotors, spacers, adapters, and seals, fabricated by stamping, punching, drilling, reaming, coining, forming, trimming, blanking, tapping, knurling, staking, marking, heat-treating, tin plating, zinc plating, oxide black finishing and molykoting. The materials are aluminum alloy sheet, strip, and rod, brass sheet, strip, and rod, steel music wire, and aluminum tape. The assembly is required to meet the following tests: Jolt and Jumble, Transportation and Vibration, Waterproofing, Function and Firming, arming and non-arming tests. Firms manufacturing this item will require a highly competent technical staff of engineers, metallurgists, tool engineers to design and maintain precision tools to produce and test precision parts. This item is considered very difficult to produce in quantities normally required by Ordnance. In addition, a considerable amount of know-how of various metal-working processes is required to produce in accordance with Ordnance Specifications.

11037. FUZE, PD, M557 ASSEMBLY (FUZE, PD, M48A3)

It is an item consisting of Fuze, PD, M48A3 assembled with Booster M125A1. Fuze, PD, M48A3 consists of 5 major components, Body, 2.412" D x 1.935" L with machined steps of smaller diameters and drilled holes. The base has 1.7-14 NS 1A external thread, the same also has 1.375-24 NS 1B LH and 1.06" D x .805" D counterbore. Material, steel, bar, 1117-1120, cold finish, ASTM A108. Alternate material, steel, forging, FS 1117 or FS 1118, Spec. MIL-S-13048. Head, 1.760" L x 1.03" D, with nose tapered to .535" and various size internally drilled cavities, material, aluminum alloy, rod, 2011-T3 or 2024-T4, ASTM B211. Ogive, cone shaped 2.315" D tapered to 1.01" smaller D, with wall thickness .052", material, steel, cold-rolled strip, temper number 5, finish number 2, ASTM A109. Tube, Flash, 1.605" L x .4415" D, .167" hole drilled lengthwise through center, .4375-20-UNF-2A thread both ends, material, tube, steel, seamless, CD, 1137, Spec. QQ-T-830 or steel, bar, FS 1035 or 1137, ASTM A-108 or steel, tubing, AMS 5082. Delay, Plunger M1, consists of 13 components, namely plunger pins, springs, spring plates, plunger body, firing pin shell, plunger support, plunger restraining spring, lock check washer, guide pin, and firing pin, that are easy to manufacture and assemble. Other minor components consist of interrupter, discs, springs, washer, screw, firing pin, etc. that are easy to manufacture and assemble. The fuze portion of this item is not considered difficult to manufacture. However, the Booster, M125A1 (See page 109) is very difficult to manufacture and is part of the assembly.

11027. FUZE, PD, M572, ASSEMBLY

Assembled is 3.75" L, 2.412" diameter, consists of 5 major components, body 2.412" D, 1.935" long, various machined steps, drilled holes and counterbores, threaded at base end. Material: steel, bar, 1117-1120, cold finish, ASTM A108. Alternate material: steel, forging, FS 1117 or FS 1118, Spec. MIL-S-13048. Head 1.760" L, 1.03" diameter, nose tap-

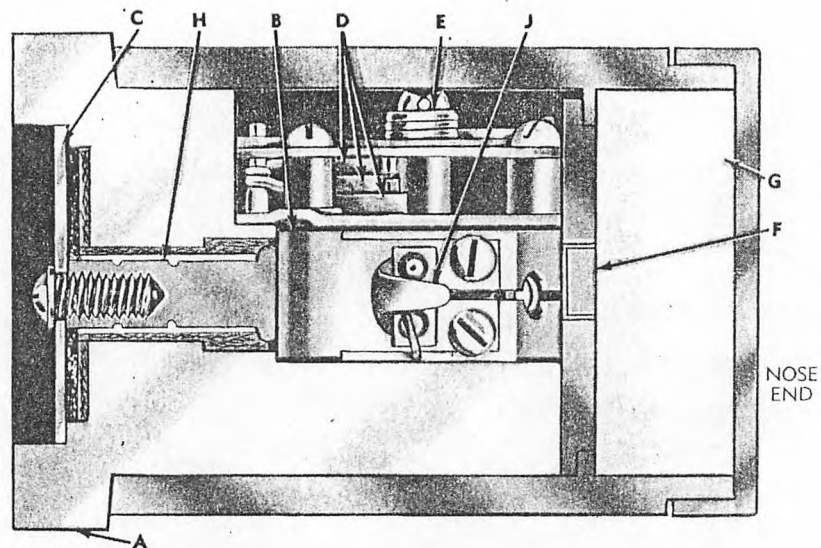
ered to .535", various internal drilled cavities, material: aluminum alloy, rod 2011-T3 or 2024-T4, ASTM B211. Ogive coned shaped, 2.315" diameter, tapered to 1.01", temper number 5, finish number 2, ASTM A109. Tube flash 1.605" diameter hole drilled through center, threaded at both ends, material: tube, steel, seamless, CD, 1137, Spec. QQ-T-830 or steel bar FS 1035 or 1137 ASTM A108. Delay Plunger consists of 13 component parts, plunger pins, springs, spring plates, plunger body, firing pin shell, plunger support, plunger restraining spring, lock check washer, guide pin and firing pin. This item is not considered difficult to manufacture, however firms bidding this item must have qualified engineers and tool designers to produce in accordance with applicable specifications.

05748. FUZE, PI, BD, M509A2, MPTS W/DETONATOR, ELECTRIC, M48

Contains approx. (40) components and is cylindrically shaped, approx. 1-3/8" diameter and 15/16" length. Fuze is to be furnished detonator loaded with the detonator furnished by MPTS manufacturer. Major components are: Housing, Rotor; cylindrically shaped with vari-size holes, slots, counterbores, and shoulders; length, 1.441"; diameter, 1.350"; material is aluminum alloy rod 2011-T3 or 2017-T4 Spec. ASTM B211, or 2024-T4, Spec. ASTM B221. Rotor; essentially a shaft with a cylinder containing various slots, counterbores, threads, and holes, on one end; over-all length, 0.716"; shaft diameter, 0.125" cylinder diameter, 0.745"; cylinder height, 0.372" material is aluminum alloy rod 2011-T3 or 2017-T4 Spec. ASTM B211. Cover, Booster; cup-shaped; O.D., 1.245"; I.D., 1.145"; length, 0.220" material is aluminum alloy sheet 1100-H12 Spec. ASTM B209. Shield; essentially hollow cylinder with dividing wall near one end; O.D., 1.250"; I.D., 1.050"; length 1.648"; material is steel tubing, Spec. QQ-T-830. Various smaller components required such as brass strip plates, pins, screws, washers, springs, spacers, leaves, contacts, and resistors. Assembled fuze subjected to following rigid tests: arming, non-arming, functioning, jolt and jumble, and transportation vibration. Manufacturing firms bidding on this item will require a highly competent technical staff consisting of engineers, metallurgists, and tool engineers to design and maintain precision tools to produce and test the required parts. This item is considered very difficult to produce in quantities normally required by Ordnance. In addition, a considerable amount of knowledge of various metal-working processes will be required to produce this item in accordance with Ordnance specifications.

05788. FUZE, PI, BD, M530A1 PRIMER AND DETONATOR LOADED

The fuze is 1.963" long x 1.350" diameter and consists of 44 different components, major components, Housing Rotor, 1.35" diameter x 1.44" long machined with various grooves, slots, bores, counterbores and holes, material, aluminum alloy rod, temper T3, Spec. QQ-A-225/3.

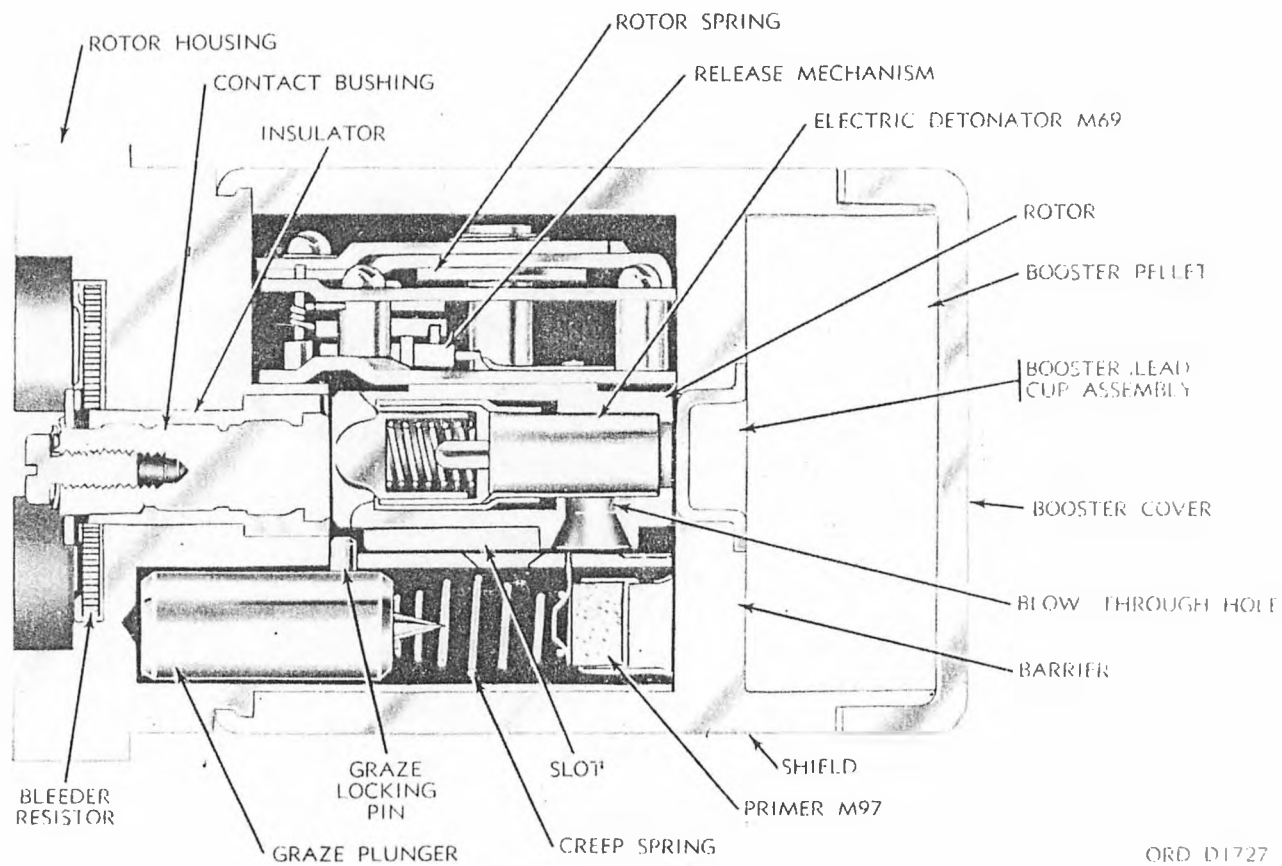


- |                     |                             |
|---------------------|-----------------------------|
| A—ROTOR HOUSING     | F—BOOSTER LEAD CUP ASSEMBLY |
| B—ROTOR             | G—BOOSTER                   |
| C—BLEEDER RESISTOR  | H—CONTACT SPRING            |
| D—SEQUENTIAL LEAVES | J—WIPER CONTACT             |
| E—ROTOR SPRING      |                             |

RA PD 213055

FUZE, PI, BD, M509A2





FUZE, PI, BD, M530A1

ORD D1727



Rotor, .745" diameter x .716" long, various size holes, slots and counterbores, material, brass rod, 1/2 hard, composition 24, Spec. QQ-B-626. Shield (Blank) 1.25" diameter x 1.489" long x 1.05" I.D. with .165" web near end, material, aluminum alloy 61S-T4, Spec. MIL-A-12545. Insulator, Contact, "Cup-shaped" .22" O.D. x .192" I.D. x .30" long, material, thermoplastic, non-rigid polyamide resin, Type 1, Spec. MIL-P-20693. Plate, Bearing (Rear). approx. 1.00 inches diameter x .028" thick with various slots, holes, and formed tabs, material, brass strip, composition 1, 1/2 hard, Spec. QQ-B-613. Plate, Bearing (Front), .762" wide x .92" long x .028" thick with various radii, slots, holes and formed tabs, material, brass strip, composition 1, 1/2 hard, Spec. QQ-B-613. Leaf Number 3, .328" wide x .475" long x .052" thick with various radii, holes and tabs, material, aluminum alloy 2024, temper T3, Spec. QQ-A-250/4. Leaf Setback .467" long x .306" wide x .052" thick, various holes and radii, material, aluminum alloy 2024, temper T3, Spec. QQ-A-250/4. Plunger Graze, .672" long x .253" diameter, material, stainless steel 303, condition A, Spec. QQ-S-763. Various small components required such as nuts, pins, screws, roll pins, springs, washers, spacers bushings, contacts, studs, clips, star sheel pallet and a bleed-er resistor. Complete assembly is subject to arming and non-arming acceleration tests, graze and armor plate functioning, environmental conditioning and safety tests. Firms producing this item will require a technical staff of engineers, metallurgists and tool engineers to design and maintain precision tools to produce precision parts. The producer is required to provide and maintain an effective quality assurance system. This item is considered very difficult to produce in accordance with applicable specifications.

11028. FUZE, PI, BD, M559

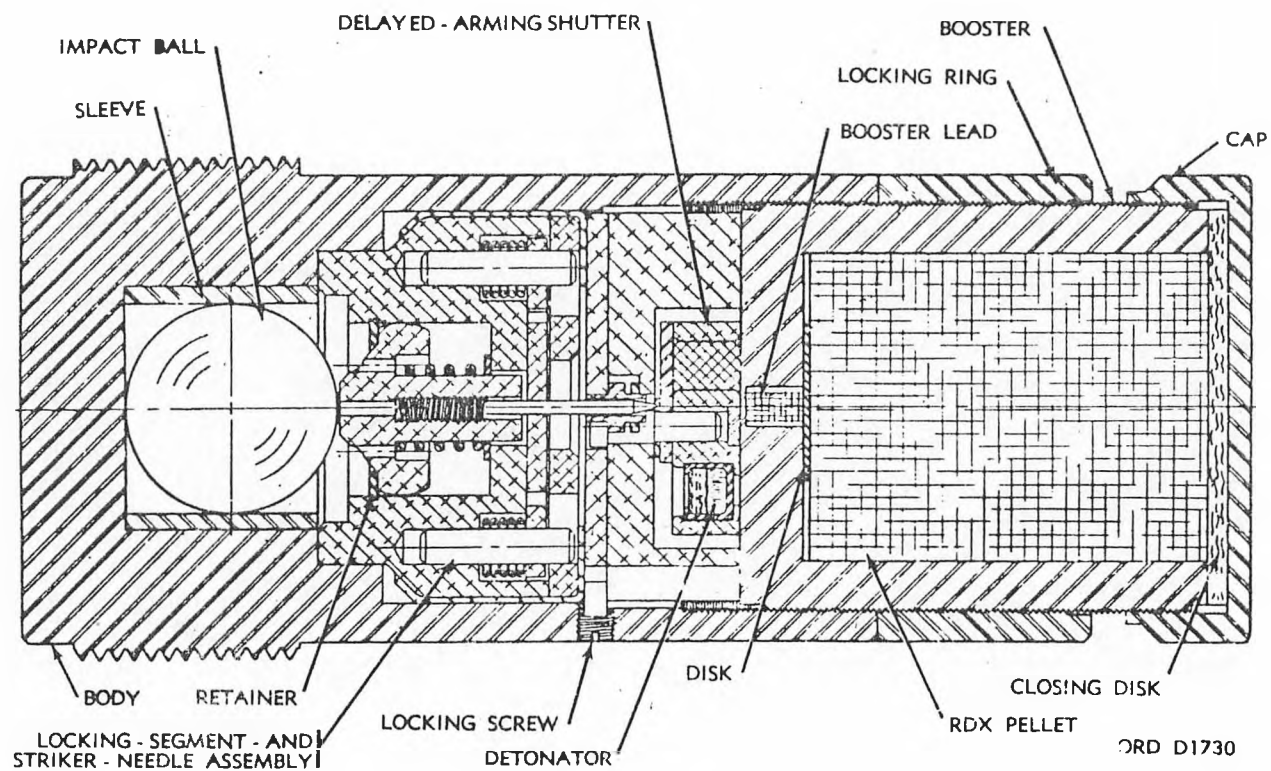
Primer and detonator loaded, 1.963" long x 1.350" diameter, consist of 44 different components. The major components are: Housing Rotor, 1.35" diameter x 1.44" long with various machined grooves, slots, bores, counterbores and holes, material, aluminum alloy rod, temper No. 3, Spec. QQ-A-225/3. Rotor, .745" diameter x .716" long, various holes, slots and counterbore, material, brass rod, 1/2 hard, composition 24, Spec. QQ-B-626. Shield, Blank, 1.25" diameter x 1.489" long x 1.05" I.D., material, aluminum alloy 615-T4, Spec. MIL-A-12545. Insulator, contact, cup shape, .22" diameter x .192" I.D. x .30" long, material, thermoplastic, non-rigid polyamide resin, Type I, Spec. MIL-P-20693. Plate, Bearing, Rear; Plate, Bearing, Front; material, Brass strip, composition 1, 1/2 hard, Spec. QQ-B-613. Leaf number 3; Leaf Setback; material, aluminum alloy 2024, temper T3, Spec. QQ-A-250/4. Plunger Graze, .672" long x .233" diameter, material stainless steel 303, condition A, Spec. QQ-S-763. Various small components required are nuts, pins, screws, roll pins, springs, washers, spacers, bushings, contacts, studs, clips, star wheel pallets, and a bleeder resistor. Complete assembly is subject to arming and non-arming acceleration tests, graze and armor plate functions, environmental conditioning and

safety test. Firms producing this item will require a technical staff of engineers, metallurgists and tool engineers. A required effective quality assurance system has to be maintained. This item is considered very difficult to produce with applicable specifications.

05796. FUZE, BD, M534A1, MPTS WITH DETONATOR

Government furnished material, approx. 4.802" L and 2.100" in D, consisting of 42 components, Fuze, Body, approx. 3.56" L and 2.10" in D, a 1.48-28 UNS-1B thread followed by a three step counterbore to a depth of 2.685" and a diameter of .875" on one end, a 1.8-12 UNS-2A-LH thread below the 2.10" shoulder, a .625-18 UNF-2B-LH thread and two .307" D holes 180 degrees apart to a depth of .205" on the opposite end, material, aluminum alloy, 7075-T6, Specification ASTM B211, alternate material, (for impact extrusion), aluminum alloy, 7075-O Temper, specification ASTM B211, or MIL-S-12545 heat treated to T6 Temper after forming, anodic protective finish required, Booster Lead Cup, approx. 1.66" L and 1.48" in D, has a 1.48-28 UNS-1A thread for a length of 1.49" on the OD, a 1.105" D cavity to a depth of 1.435" followed by a .125" D cavity to leave a bottom wall thickness of .015", material, aluminum alloy, 7075-T6, Spec. ASTM B211, anodic protective finish required, Locking Ring, approx. .75" L x .168" in D, a 1.48-28 UNS-1B thread on the inside, two slots approx. .065" D and .095" W 180 degrees apart on the face of one end, material, aluminum alloy, 7075-T6, Spec. ASTM B211, anodic protective finish required, Cap, approx. .43" L x 1.67" in D, cup-shaped with a 1.48-28 UNS-1B thread and a bottom wall thickness of approx. .08", material, aluminum alloy, 7075-T6, Spec. ASTM B211, anodic protective finish required, Ball Bearing, MS-19060-32, Sleeve, approx. .680" L and .873" in D, ID of .756", material, steel corrosion resisting, bar, type 440C condition A, Spec. ASTM A276, Rockwell hardness C58 to C62, Locking Segment and Striker Needle Assembly, composed of Segment Holder, approx. .825" L and 1.356" in D, two counterbores stepping down to .0260" D through hole on the longitudinal axis, two .2" D blind holes 180 degrees apart on the opposite end, material, aluminum alloy, 7075-T6, Spec. ASTM B211, anodic protective finish required, Striker Body, approx. .651" L x .620" in D, has a .0935" through hole on the longitudinal axis tapped to a depth of .35" with a 4-48 UNF-2B thread, four equally spaced .0468" D thru holes on the .180" thick flange, material, aluminum alloy, 7075-T6, or 2024-T4, Spec. ASTM B211, Cover, cup-shaped component, 1.358" I.D. and .70" L, .865" D hole in bottom, .021" wall thickness material, aluminum alloy sheet, 5052, Spec. ASTM B209, two Segments, each approx. 1.0" L, .80" W .066" thick, kidney shaped with various blending radii, material, aluminum alloy, 6061-T6, ASTM B209, Segment Holder Plate, 1.350" in D, .108" thick, a .3125" D axial hole, two .110" W slots each .21" L and 180 degrees apart, material, aluminum alloy, 7075-T6, Spec. ASTM B209, a striker needle, retaining ring, striker washer, 2 pins and 3 spiral springs complete the Locking Segment and Striker Needle Assembly, Arming Delay Assembly, Loaded, composed of Delay Body. approx. .460"





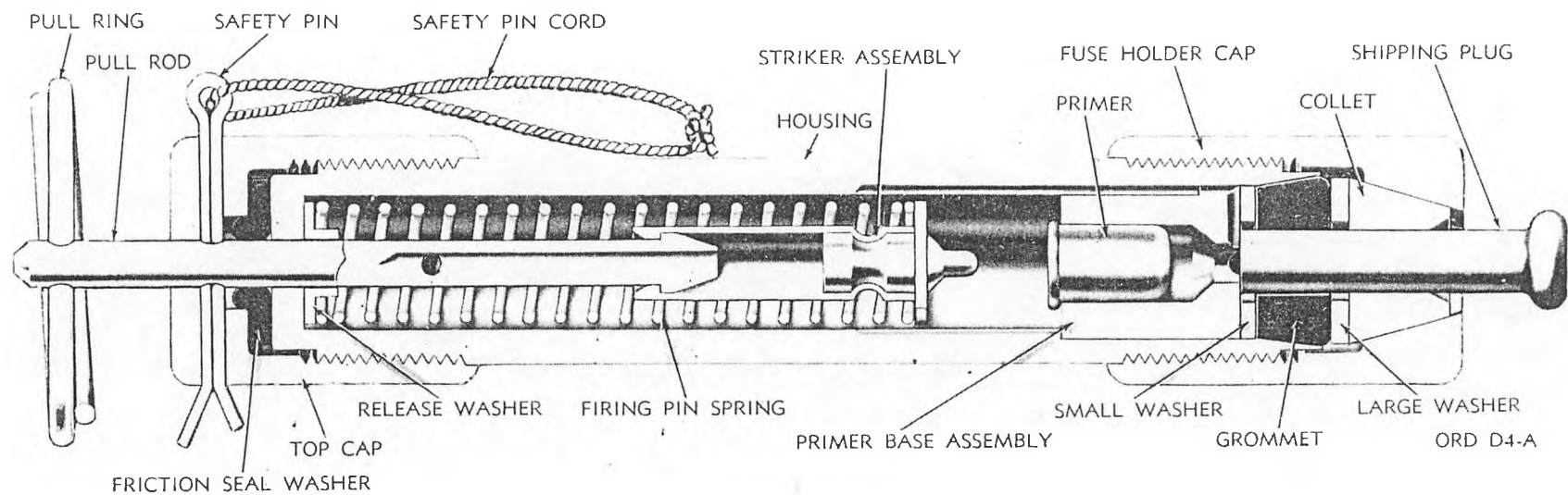
FUZE, BD, M534A1, MPTS, (M578 is similar)



L x 1.423" in D with various bores, counterbores, drilled and tapped holes, material, aluminum alloy, SG 100A Spec. ASTM B85, anodic protective finish required. Cover Plate, 1.27" in D x .083" thick not including two .04" H x .1235" D bosses, two blind .14" D holes, and 4 various size thru holes, material, aluminum alloy, 2024-T3, Spec. ASTM B209, anodic protective finish required, Locking Plate, approx. .75" L x .40" W, .038" thick, 90 degree bend on each end to form .129 and .06" legs, .090 D hole thru the longer legs, material, steel, stainless, strip, Type 304, Spec. ASTM A167, Timing Segment, approx. .74" in D, .0375" thick, ten teeth covering approx. 53 degrees of the circumference, two thru holes, an open end radial slot and a circumferential slot, material, stainless steel strip, 1/2 hard, Spec. ASTM A177, alternate material, stainless steel, Type 410, Spec. ASTM A176 or steel, Class 420, Spec. QQ-S-766, Rockwell hardness 15N to 75, the loaded arming delay assembly also consists of a Shutter Assembly, which includes a Shutter with a weight and the XM61E2 Detonator (Government finished material), staked into separate holes 180 degrees apart, several smaller components including an escape wheel and pinion assembly, pallet, spring loaded safety plunger, pins, washer, shutter shaft, tube pivot and 2 machine screws complete the arming delay assembly. The fuze assembly must withstand the jolt, jumble and transportation vibration tests; the locking segment and striker needle assembly and the arming delay assembly are subjected to arming and non-arming tests at specified spin rates. This item is considered very difficult to manufacture in accordance with the applicable specifications. Firms bidding should have a staff of engineers, metallurgists and tool designers.

09934. IGNITER, TIME BLASTING, FUZE, WEATHERPROOF, M60, ASSEMBLY

Consists of (22) components and (4) sub-assemblies, 4.78" long x 1.168" diameter, Firing Assembly, (10) components, Cap, top, .94" long x .75" O.D., material, plastic, nylon, Housing, 3.18" long x .625" O.D., material, plastic, nylon, Pin, Cotter, ORD Std, Ring, pull, spring, 1 1/2 coils, 1.02" I.D., .072" diameter, material, wire, steel, FS1018 or FS1020, Rod, pull, 2.17" long x .149" O.D., with taper head .186" O.D. x .23" long, material, steel, corrosio. resist- ing type 303 or 303SE, Condition A, Spring, firing pin, .365" diameter O.D., wire diameter .035", 20 coils, heat treated, material, wire, steel, music, ASTM A228, Washer, friction seal, .56" diameter x .07" thick, center hole .08", material, rubber, type R, Class RS, Grade RS609, Washer, release, stepped, O.D. .38" x .03", step diameter .205" x .08" wide, center hole .152" I.D., material, steel, corrosion resist- ing type 303 or 303SE, Cond. A, Striker Assy, (2) components, Housing, firing pin, .89" long x .219" O.D., material, steel, corrosion resist- ing type 303 or 303SE, Cond. A, Pin, firing, .45" long, flange diameter .38" with flats .26", body diameter .25" long x .186" diameter, mater- ial, steel, corrosion resisting type 303 or 303SE, Cond. A, Primer Base Assy (5) components, Base, primer, .51" long x .445" diameter, mat- erial, plastic nylon, Primer, Percussion, M39A1, Assy, (5) components, Anvil, .270" long x .192" diameter x .0503" wide, material, brass, cartridge strip, light anneal, Body, .382" long x .227" body diameter x .1945" I.D., head diameter .275", head diameter hole .14", material, brass, cartridge, strip, drawing, anneal. Cup, .16" long x .1675" I.D. x .1955" O.D. x .0185" wall thickness, material, gilding metal (95/5 brass) sheet or strip. Disc, .167" O.D. x .0032" - .006" thick, sheet, foiling paper, type II. Primer mixture, potassium chlorate, sul- phocyanate TNT, etc. Alternate to primer M39A1 as a commercial primer may be used subject to acceptance by the ordnance as defined on appli- cable blue print. Cap, fuze, holder, 1.09" long x .75" O.D., knurled, material, plastic, nylon, Collet (2 ea), .31" long x half circle .242" diameter, material, plastic nylon. Grommet, .314" long x .514" O.D. tapered to .465", .212" center hole, material, rubber, type R, Class RS. Grade RS610, Plug, shipping, 1.00" long, body diameter .20", head diameter .35" x .12" material, plastic, nylon, Washer, .25" I.D. x .55" O.D. x .005" thick, material, plastic, nylon. Washer, .128" I.D. x .45" O.D. x .005" thick, material, plastic, nylon. Manufacturing firms bidding this item will require facilities to process and load explosives and a technical staff familiar with government specifications and manu- facturing processes. This item is not considered difficult to manu- facture, however, know-how in relation to ammunition items is consider- ed necessary to produce this item in large quantities.



IGNITER, TIME BLASTING, FUZE, WEATHERPROOF, M60, ASSY

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07263. PRIMER, XM94E1

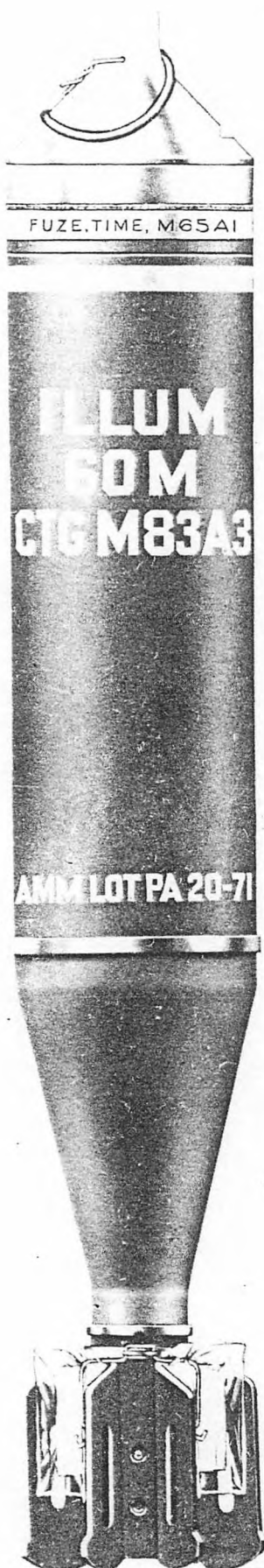
Procured loaded and packaged for storage or subsequent use. Metal parts consist of 3 components. Cup, primer, .190" long x .160" diameter x .140" K.D. with base thickness .014" and .080" diameter hole in center, material, aluminum alloy, sheet 100-0, ASTM B-209 Disc closing, .138" diameter x .005" thick, material, aluminum foil, Spec. MIL-A-148. Disc sealing, .135" diameter x .002" thick, material, aluminum foil, Spec. MIL-A-148. .047 grams of NOL #130 priming mixture is loaded in 1 increment under 30,000 PSI and 1 increment of .065 grams of lead azide under pressure of 15,000 PSI is loaded in each primer followed by crimping generally using automatic equipment. Firms producing this item will require a technical staff of engineers and chemical engineers familiar with explosives and loading techniques. This item is considered difficult to produce in mass production quantities in accordance with applicable specifications.

10468. PROJECTILE, 60MM, ILLUMINATING M83A3, LOADING ASSEMBLY

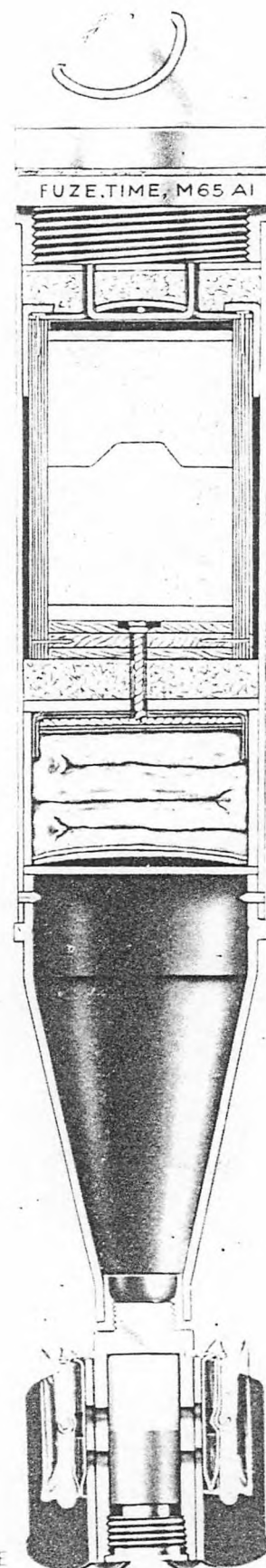
It is 10.09" long, 2.364" at the point of maximum diameter and consists of (a) a Tail Assembly (b) a Body Tube Assembly (c) Illuminant Loading Assembly (d) Parachute Assembly and a number of individual components. (a) The Tail Assembly consists of (1) the Cone, Tail made from steel, strip, 1020, Spec. QQ-S-698 having a length of 3.45", maximum I.D. of 2.183", tapering to a minimum O.D. of .820" and having a wall thickness of .068", (2) Coupling fabricated from steel, bar or tube MT 1010 to MT 1030, 1110 to 1118 Fed Std No. 66 or ASTM-A107 or A108 with an I.D. of 2.07", a length of .88" and an irregular O.D. varying from 2.180" to 2.362", (3) Adapter, Fin constructed from steel bar or tube, 1010-1020 or 1110-1118 Fed Std No. 66 or ASTM-A107 or A108, having a length of .38" O.D. tapering to a max. of .823, a flange of .94" diameter and .06" wide and have a .625 - 18 UNF-2B thread cut into the I.D. Thread dimensions apply after assembly and plating. The adapter fin and coupling are brazed into the tail cone with copper braze B Cu-1 ASTM B260-627. The tail cone assembled Rockwell B-80 all over. (b) The body, Tube Assembly includes (1) the Tube Body made from steel tubing, seamless, CD, MT 1010 to MT 1030, Spec. QQ-T-830 with a length of 6.31", I.D. of 2.219" and wall thickness of .056", (2) Adaptor constructed from steel MT 1010 to MT 1030, 1110 to 1118, Fed Std No. 66 or ASTM-A107 or A108 having a length of .50", O.D. of 2.226", a flange on one end of 2.335" diameter and .13" width and 2-20 UNS-1B thread cut into the I.D. The adaptor is brazed to the tube, body with silver solder, Class I, Spec. QQ-S-561.







14.28 MAX



RA PD 80728E

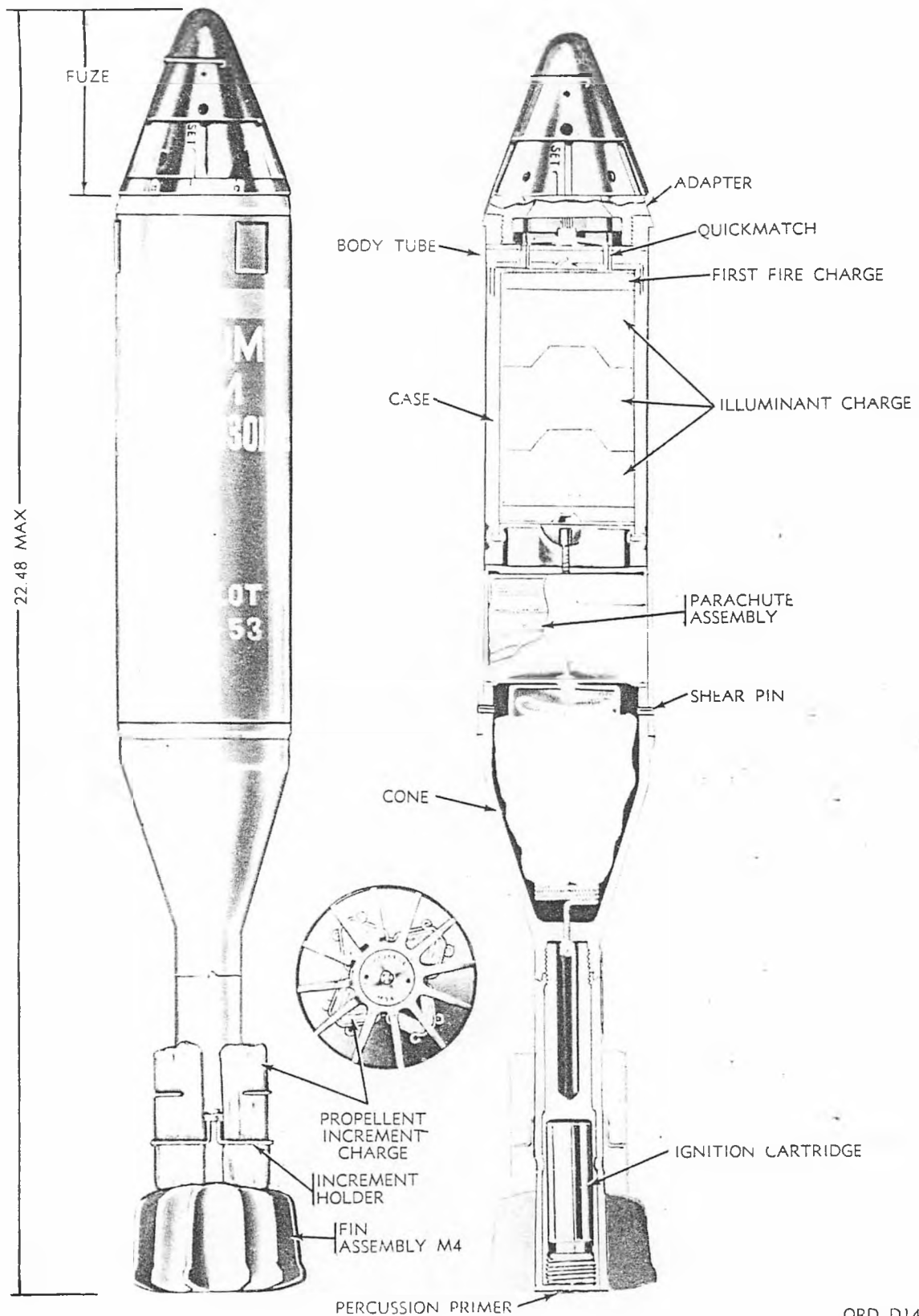


(c) The illuminant Loading Assembly consists of the (1) Illuminant Suspension Assembly which includes the (a) Sleeve made of copper or zinc plated copper .37" long, .251" high, .170" wide and crimped on to the suspension cable which is approx. 16" long and made from preformed cable 7x7, 1/16" steel, Spec. MIL-W-1511, (b) Disc constructed of steel, strip temper No. 1 or 2, ASTM-A109 with 2.212" diameter, .105" thickness and with a .10" diameter hole in the center, (c) Spacer, made from felt, No. 9R5, ASTM-D944, having a diameter and four equally spaced 3/16" holes located on a circle .50" from the center, (d) Plug, made from plywood, 5 ply, commercial, exterior, Grade C, back and inner ply, with a 3/8" width, 1-13/16" diameter and a 1/4" center hole counterbored to 1/2" for a depth of 3/32", and a 1/32 x 45 degrees chamfer on the edge of the counterbored face (e) End, Cable fabricated from steel, bar AISI Grades C1005-1010, C1108-1110, or B1111-1113, Spec. ASTM-A107 having a length of .09" and a hole drilled through the center with a diameter of .070", (2) Case, made from boxboard sheet, commercial finish, density No. 4 with a length of 3-1/32", O.D. of 2-11/64" and I.D. of 51/64", (3) Illuminant Composition, consisting of 36% sodium nitrate, Grade B, Class 2, Spec. MIL-S-322, 9% laminac type A, 55% magnesium type I, 30/50 mesh, average particle size 350 microns Spec. MIL-P-14067, (4) First Fire Composition which includes 50% laminac type B, 20% silicon, Grade 1, Class B, Spec. MIL-S-230, 10% tetranitrocarbozole, Spec. MIL-T-13723 and 15% zirconium hydride, technical grade, Spec. MIL-Z-21353, (5) Disc, Top made from chipboard, commercial, finish No. 2, with a diameter of 2.17", thickness of .062", having a center hole of .25" diameter and 4 equally spaced .16" holes located on a circle .50" from the center, (6) Spacer, made from felt No. 9R5, ASTM D944, having a diameter of 2.24", 3/8" thickness, center hole of .10" diameter and four equally spaced 3/16" holes located on a circle .50" from the center, (7) Disc, Quickmatch made from steel strip, temper No. 1 or 2 ASTM-A109 with a thickness of .060", diameter of 2.212", and four equally spaced holes located on a circle .50" from the center, (8) Quickmatch, type II, Class A, Spec. MIL-Q-378, 2 pieces 5" in length. (d) The Parachute Assembly consists of (1) an octagonally shaped Canopy, 15 1/2" on a side, made from parachute cloth, type D, Spec. PA-PD-76. (2) 8 Shroud Lines, 3/16 x 30" long made of nylon tape or flat braid, minimum breaking strength 40 pounds. Individual components associated with the parachute assembly are the Disc Parachute fabricated from chipboard, commercial, finish density No. 2 with a 2-5/32" diameter and .062" thickness Spacer, Parachute, (2 required) made of steel, strip, temper No. 2 ASTM-A109 having a length of 1.75" and a semicircular cross section of 1.10" radius, Container (2 required) constructed of boxboard, sheet, finish density No. 4 commercial, having a height of 1/2", a thickness of .021", a base in roughly the shape of a semicircle with a diameter of 2-5/32" and a notch 1/2" wide cut at the center. The tail assembly is attached to the body, tube assembly by means of four Pins, Shear, made from brass, temper 1/4 hard, ASTM B134, Alloy No. 6, which are inserted in holes drilled through the tube, body and into the coupl-

ing. The length of the pins is .13" and the diameter is .095". One end is tapered to a point at an angle of 68 degrees. The adapter and fin are closed during shipping by a Plug, Closing and Plug, Shipping respectively. Both are molded from commercial polyethylene. Manufacturing firms bidding on this item will require competent engineering and metallurgical staffs in addition to personnel familiar with the handling, blending and pressing of pyrotechnic compositions. This item is considered difficult to produce under current specifications and drawings.

08090. PROJECTILE, 81MM, ILLUMINATING, M301A2

Consists of 4 assemblies and 6 additional components, 14.335" long x 3.18" maximum diameter, cup and disc assembly, 3 components, cup, pull-cord, 2-1/8" diameter x 5/8" high x .021" wall thickness, material, boxboard sheet, Spec. MIL-B-20467, Disc, coupling, 2.966" diameter x .067" thick, 4 point star embossed in center with eyelet center hole, material, steel strip, temper No. 2, Spec ASTM-109, Eyelet, rolled flange, .143" diameter x .185" high x .012" thick, procured from Edwin B. Stimpson, part No. A557, alternate United Shoe Machine Co., part No. SE66. Cup, parachute (2 each) cup segment, 2.76" diameter x 1/2" deep x 1.76" wide with V notch near center line on straight edge of segment, material, boxboard, sheet, Spec. MIL-B-20467, Disc, parachute, 2.84" diameter x 1/16" thick, material, chipboard, sheet, Class 2, Spec. UU-C-282, Pin, shear (4 ea.) 1/8" diameter x .24" long with cone shaped point .07" long, material, wire, brass, quarter hard, alloy No. 6, Spec. ASTM-B134, alternate brass, rod, quarter hard, Spec. ASTM-B16, Spacer, (2 ea.) parachute, circle segment 1.459" radius x 1.455" high x 2" wide, material, steel, strip, temper No. 2, Spec. ASTM-A109, Plug, protective, product of Protective Closure Co., Catalog No. DWH-12-060 or approved equal, Plug, protective, National Aeronautical Standard, NAS-816-75, Projectile, (4) components, Tube, body 9.14" long x 3.138" diameter, with varying diameters, material, steel tubing, seamless, Spec. QQ-T-830, Adapter, 3.13" O.D. taper flange, 2.945" body O.D. x .625" wide with 2.4-18NS internal thread, material, steel bar, Spec. ASTM-A108, Cone, tail, 3.16" maximum O.D. reduced to 1.14" diameter opposite end with .8" 16 NS thread, varying wall thickness, material, steel bar for hot forge, Spec. ASTM-A108, alternate, steel, Spec. MIL-S-11310 for cold forming process, Pin, adaptor, .25" long x .125" diameter with tapered end, Material steel, bar, 1010 to 1020, Spec. ASTM-A-108, Illuminant Assembly, 12 components, 5-5/16" long x 2.835" diameter, Case loading assembly, support, charge, 2.43" diameter x .03" thick with .38" center well .12" deep, material, steel strip, temper 4, Spec. ASTM-A-109, Case, 2.835" diameter x 5-5/16" long x 2-7/16" I.D., material, boxboard, sheet, Spec. MIL-B-20467, Charge, First five composition, one increment, Illuminant composition, 3 increments, fire clay end seal, Disc, top, 2.82" diameter x 1/16" thick, material, chipboard, sheet, Class 2 Spec. UU-C-282, Disc, Quickmatch 2.915" diameter x .075" thick, material, steel, temper No. 1 Spec. ASTM-A109, Spacer, Quickmatch 2.932" diameter x .37" thick, material, felt, hair, sheet, with 1" center hole,



ORD D1486



material, wood soft, commercial, procurable from National Telephone Supply Co., incropress oval sleeve Part No. 28-2-G, Suspension Wire Assembly, Cable, steel preformed, 3/32" diameter, 7 x 19, commercial galvanized, approx. 29 1/2" long, military standard ball end, locked on end of cable and 750 pounds tension test applied to the assembly, Cup, Suspension, 2.44" O.D. x .75" wide with .37" diameter center spherical well, material, steel, strip, temper No. 4, Spec. ASTM-A109, Disc, 2.915" diameter, x .12" thick, 4 point star embossed in center with cable center hole, material, steel, strip, temper No. 2, Spec. ASTM-A109, Rivets, six military standard, Nails, 6 No. 18 x 1/2" long, flat head, steel, commercial, Quickmatch, type II, Class A, 3 required, approx. 6" long, Spec. JAN-A-378, Parachute Folding Assembly, 43" across point to point of parachute, Disc, separator 2-7/8" diameter x 1/16" thick, material, chipboard, sheet, Class 2 Spec. UU-C-282, Parachute Assembly, 3 components, Gore, (8 ea.) base equals 20", equal sides cut to triangular point, 24" base to point (equilateral triangles) Crown, 3" diameter, material, gore and crown, Paracut Cloth, Type D, Spec. PA-PD-76, stitched with nylon thread, Spec. MIL-T-7807, Shroud lines, (8 ea.) approx. 45" long, material, nylon cord, 630 Denier Nylon yarn, 17 carrier Braider, Parachute Holder Assembly, 4 components, Body 4-3/4" long x 3-1/8" diameter, material, cloth, cotton, sheeting, type 5, Class 1, Spec. CCC-C-442, Bottom, 3-1/2" diameter, material, cloth, cotton, sheeting, type 5, Class 1, Spec. same as body, Eyelet, (2 ea.) rolled flange material, same as eyelets listed above, Pull Cord, approx. 33" long material, cotton seine twine, No. 36, Spec. T-T-881, Parachute sub-assemblies are joined and folded in a series of eight operations per folding assembly drawing. Contractor shall provide and maintain an effective quality assurance system in compliance with the requirements of Spec. MIL-I-45208. Manufacturing firms bidding on this item should have a technical staff consisting of engineers, chemists, technicians, metallurgists, and tool design engineers, to design and maintain tools to produce this item by mass production methods. This item is considered extremely difficult to manufacture to applicable specifications.

10475. PROJECTILE, 105MM, ILLUMINATING, M314A2E1, MPTS ASSEMBLY

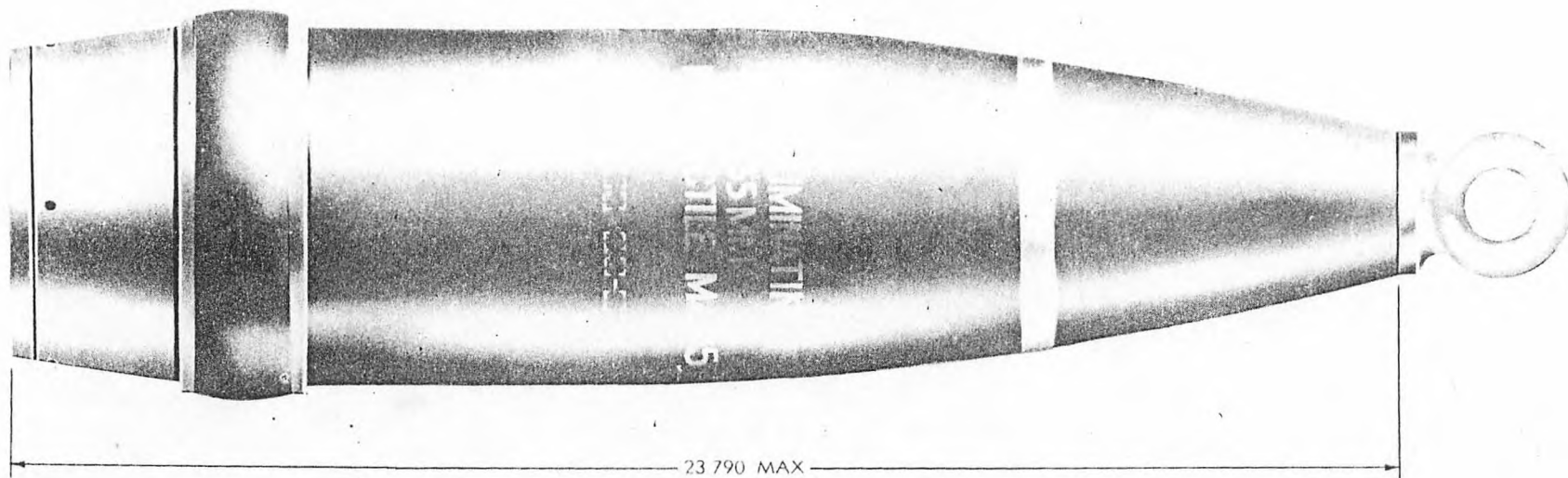
It is approx. 14.84" long x 4.128" at the point of maximum O.D. The assembly consists of three components (1) the body, (2) the plug, base and (3) blank, rotating band. The body is manufactured in one piece from carbon steel bar, hot rolled, nonresulphurized, special quality, ASTM Spec. A107. The maximum O.D. of 4.128" occurs at the base. 1.92" forward from the base the body O.D. is decreased to 4.100" and remains constant to a point 4.67" from the nose. At this point the O.D. begins to decrease rapidly along a 11.50" radius until a minimum O.D. of 2.38" is reached at the nose. The I.D. is 3.200" at the base and is decreased to a minimum of 1.910" in three steps. The first of these steps occurs .42" from the base where the I.D. decreases from 3.200" to 3.001". The second step is located 12.60" from the base where the new I.D. is 2.720". The third step is located 1.053" from the second. The dia-

meter at that point is decreased to 1.910". The pitch diameter is 1.9459" and the minor diameter is 1.910". At a point 1.05" from the base, the body is undercut for a length of .87" and to such a depth that the O.D. is decreased to 3.94". This groove is made to accept the rotating band. At the nose of the body, 5 staking notches are cut. These are equally spaced along the O.D. The plug, base is fabricated from carbon steel bar, special quality, hot rolled, 1030, ASTM Spec. A107. the diameter of the plug is 4.078" and its width at this diameter is .6". The diameter is then stepped down to 3.207" for a width of .4". this allows the plug to fit into the base of the body. The inside face is cut away to form a cavity in the shape of the upper portion of a hemisphere of 2" radius. The edge of the outer face is chamfered .10" x 45 degrees. The blank, rotating band has a wall thickness of .197" and I.D. of 4.14" and a width of .865". It is made from gilding metal, Spec. MIL-B-20292. After it is fitted to the body, it is machined to a width of .81" with an 8 degree chamfer .25" long on its forward part. The O.D. after finishing is 4.223". All interior and exterior surfaces of the metal parts assembly except the threads, rotating band and the force fits surfaces of the base plug and body will be coated in accordance with system No. 20.1 of MIL-STD-171. The color will be white No. 37874 of FED-STD-595. The coating thickness will be 0.9 to 1.5 mil. The coating will withstand a 144 hour salt spray exposure. Manufacturing firms bidding on this item should have a competent staff of engineers and metallurgists.

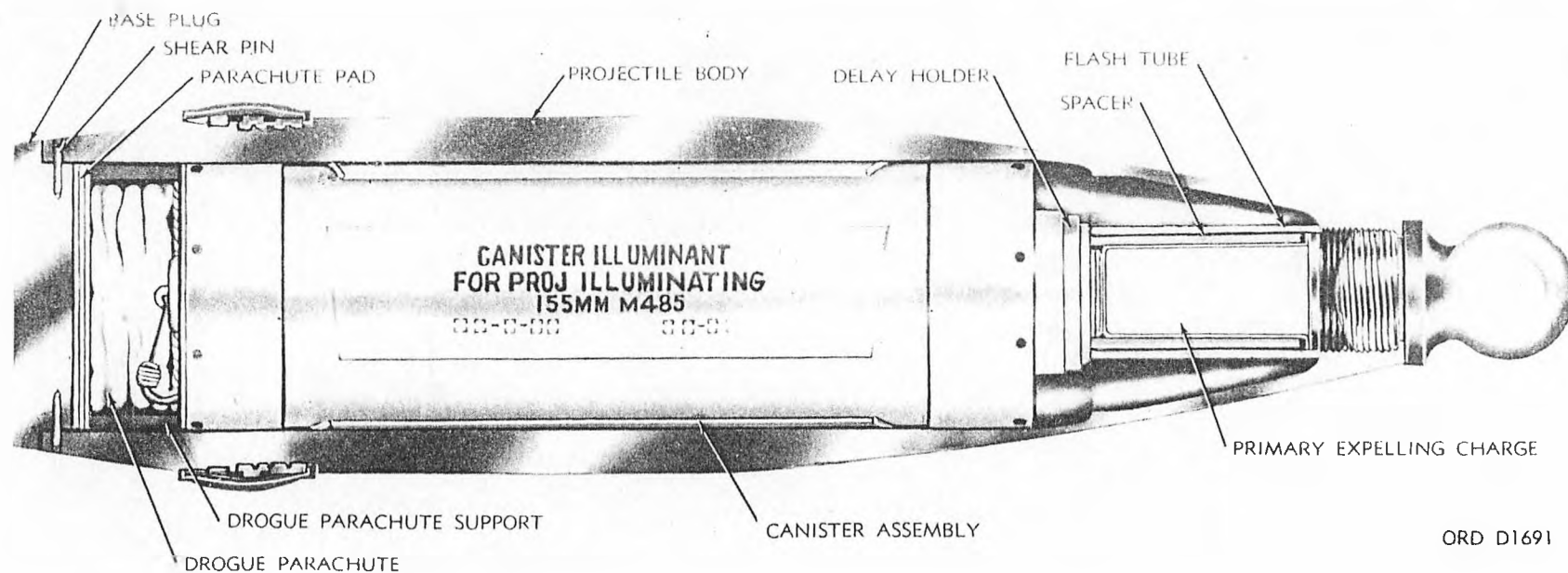
10985. PROJECTILE, 155MM, ILLUMINATING, M485

Consists of a (1) Metal Parts Assembly, (2) Expelling charge Assembly, (3) Parachute, Drogus and Canister Loading Assembly, and a number of individual components. (1) The Metal Parts Assembly consists of (a) a Body made from steel, carbon, billets for forging, Spec. ASTM A273, 1050, 23.34" long 6.092" maximum O.D. with rotating band seat and obturating band seat, tensile strength 120,000 min., yield point 100,000 min., (b) Plug, Base, made from steel; grade composition 1045 Blank, gilding metal, Class B, Spec. MIL-B-20292, 6.116" I.D. x 6.60" O.D. x 1.07" long, (d) Band Obturator, material, centrifugally cast clear tubing, composition A, Type I, Spec. MIL-M-20693, 5.92" I.D. x .175" wall thickness x .375" wide. (2) the Expelling Charge Assembly is made from (a) the Cover, Expelling Charge 1.90" diameter x .020" plastic polyethylene, sheeting, type I, Class L, grade 1, Spec. L-P-512 (b) Cup, Expelling, Charge, 3.60" long x 1.48" I.D. at mouth with .025" wall thickness with flanged end; material, plastic, polyethylene, Type I, Class L, grade 1, Spec. L-P-390. The charge, expelling is 95.0 plus or minus 1.0 grams of black powder, class 3, spec. MIL-P-223. (3) The Parachute, Drogue and Canister Loading Assembly consists of (a) Parachute, Drogue, 12" diameter made from 2 crowns, 6 gores, 13 oval sleeves, 12 eyelets, and 6 shroud lines, (b) Shroud, wire, wire rope, steel, MIL-W-1511, .125" diameter, 26" maximum length, (c) Canister Loading Assembly consists of (1) Canister Metal Parts Assembly which





1412



ORD D1691

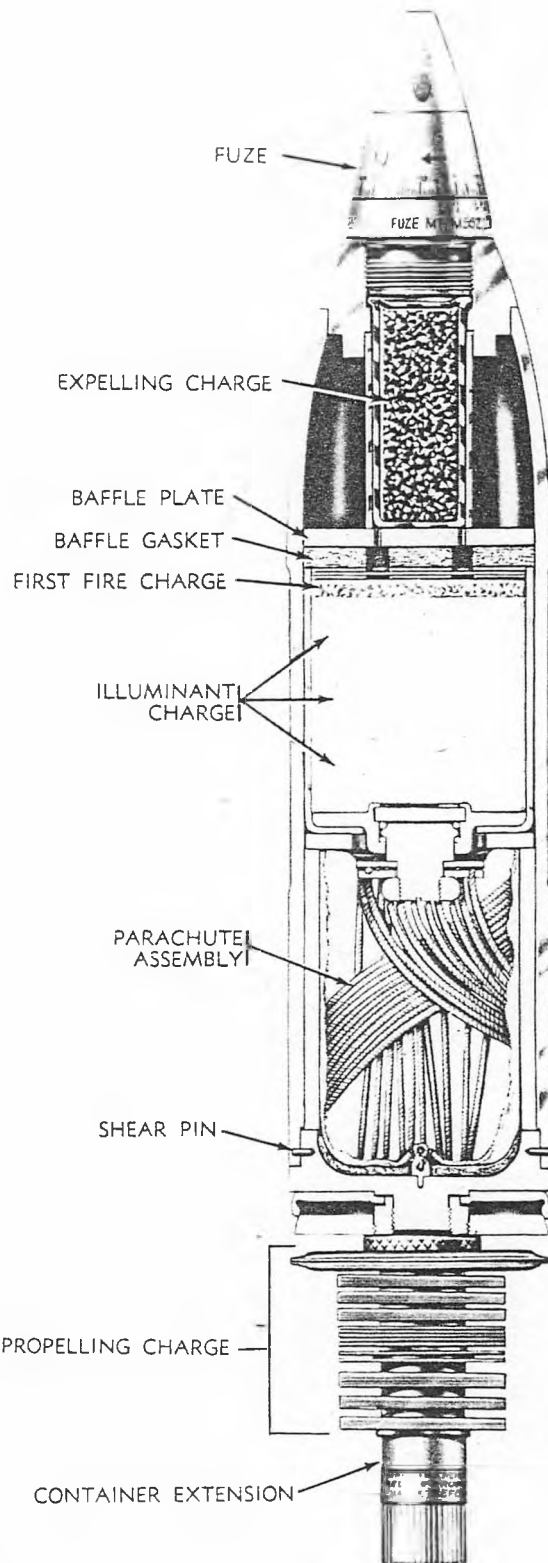
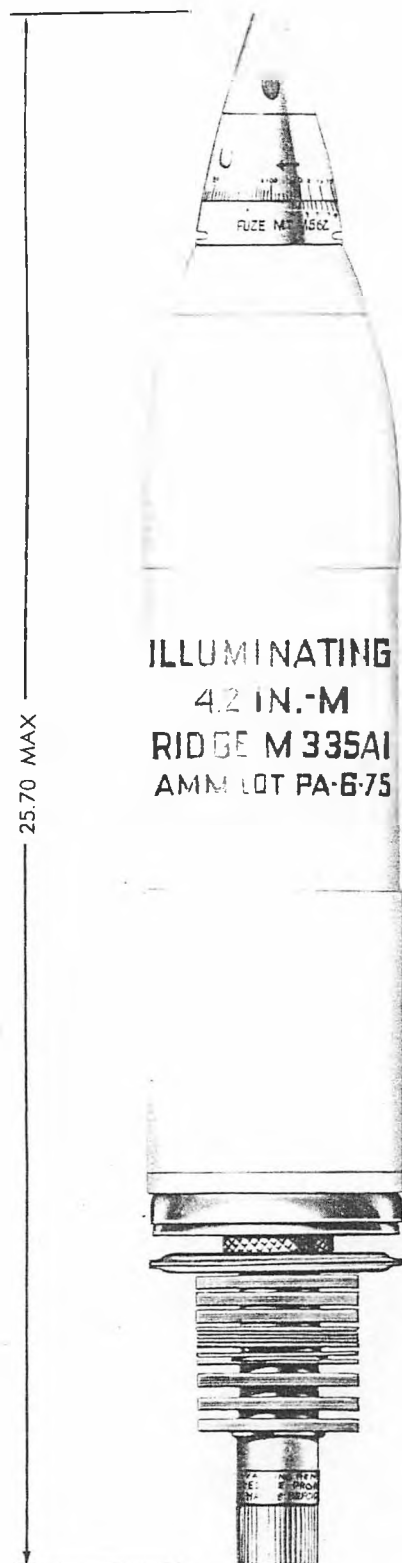


includes (a) Canister steel tube, round, seamless, grade 1020 or 1025 ASTM-A519, 14.62" long x 4.55" maximum O.D. x 4.257" I.D., (b) Fin 9.69" long x .022" thick curved to a 2.219" radius, made from steel, strip, cold rolled, No. 1 temper, Spec. ASTM-A109, (c) Nose, Canister, steel, grade 1010 to 1020 ASTM A107 or A108, 1.19" maximum length x 4.250" maximum diameter with 1.910" center hole; held to the canister with (d) Pins, Shear (8) steel, bar, round, cold finished, comp. 1117 ASTM-A108, .38" L x .188" diameter, (e) base, Canister Assembly consisting of Base, Canister (2) material, steel, bar cold finished, comp. 1020 or 1025 per ASTM-A108, semicircular in shape, 2,280" radius, .51" thick, semicircular center hole of .472" radius, Swivel, Canister Assembly consisting of a Plate, Swivel; Housing, swivel; Pin swivel; 11 ball bearings (2) Delay Holder Loading Assembly made up of (a) Delay Holder loaded with 2 delay trains of 5 increments of (b) Powder Ignition, Gasless, MIL-P-22264 (1st increment) (c) Manganese Delay Composition MIL-M-21383 (2nd-4th increments) (d) Black Powder, MIL-P-223 (5th increment). The delay holder is screwed into the nose, canister, Beneath the delay trains is located an (3) Expelling Charge Assembly, Secondary loaded with 10.6 grams of black powder, MIL-P-223 class 6 glazed and 7 grams of black powder, MIL-P-223 class 2 glazed. Within the Metal Parts assembly is the (4) Parachute, Main and Candle Loading Assembly consisting of (a) Parachute Main 100 Inch made from a center panel, cloth nylon, parachute, type 1 color international orange No. 12197 Spec. MIL-C-7020, 193.406" x 36.000", and 2 side panels, cloth, nylon, parachute, type 1, color natural or white, Spec. MIL-C-7020, trapezoidal in shape with bases of 3.406" and rope, steel, Spec. MIL-W-1511, .125" diameter x 33" long. the wire rope is in turn attached by a pin and clevis assembly to (b) Candle Loading Assembly which includes a Shell, Illuminant, Container, 7.50" x .4078" I.D. x .078" wall thickness, steel, tube, seamless, comp. MT 1015, MT 1020 to MTX 1005, MTX 1020 per ASTM-A519, Base Candle, 4.250" maximum O.D. x .80" wide, center hole 1.193" diameter counterbored to .1.410" and 1.569" made from steel bar: cold finished comp. 1115-1120 ASTM-A108, Swivel with 62 ball bearings. The candle loading assembly is loaded with 7 increments of illuminant composition III, MIL-STD-716, prime composition III, MIL-STD-734 and yellow first fire composition, MIL-STD-720. The total candle weight is 2725 grams. There are also a number of miscellaneous components such as spacers, discs, rings parachute supports and parachute wrappers. Firms bidding on this item should have a thorough knowledge of pyrotechnic processing, blending and consolidation as well as experience in the behavior of parachutes. A competent staff of engineers familiar with shell loading and chemical processing is essential. This item is quite sophisticated and is considered difficult to produce.

03460. PROJECTILE, 4.2", M335A1

Four components, Body, 14.28" long x 4.191" O.D. maximum with curved tapered nose, counterbored, 3.809" x .63" deep at base, nose I.D. 3.062", wall thickness .23", material, steel, tube, nonsulphurized,





ORD D1497



Spec. QQ-T-830k or tube steel, Spec. QQ-T-00825, Plug, base, 4.156" O.D. x 1.585" side with 15/16-14 O.D. Thread, LH, protruding stud, material, steel, Spec. QQ-S-633 or steel, cold-extruded, Spec. MIL-S-11310, Adapter, nose, 3.225" maximum O.D. x 1.89" wide, bored and counterbored, machined all over with 2" 12NS Thread in nose section, material, steel, bar, non-resulphurized, Spec. QQ-S-633, Spacer, 2.50" long x 1.80" O.D. x .10" wall thickness, material, steel, tubing, Spec. QQ-T-830, Anchor, right angle strip, .325" long x .325" wide x .352 high x .0239" thick with hole in side and base, material, steel, strip, Temper No. 4, Spec. ASTM-A-109, Canister, Body, 3.705" diameter x 5.45" long x .067" thick, material, steel, strip, Temper No. 4, Spec. ASTM-A-109, or strip, ASTM-A-425, Disc, cover 3" diameter, material, cheesecloth, Disc, filling, 3.58" diameter, cardboard, bristol, Type II, 14 ply, Canister Loading charge, magnesium illuminant composition, magnesium, sodium nitrate, potassium nitrate and boron, Canister Base Assembly, consisting of: Base, flange type with hub, 3.545" maximum O.D. x .82" high, material, Aluminum alloy die forging, 7075-T6, Plate, base, 1.5" O.D. x .26" thick, material, Aluminum alloy rod, 7075-T6, material ASTM B221, alternate ASTM B211, Pin, swivel, maximum O.D. 1.31" x 1.49" long, with steps, material, Aluminum alloy, 7075-T6 extruded rod, Pad, parachute, 3.83" O.D. x 1/8" thick, material, felt, Type I, Parachute Assembly, consisting of: Band, reinforcing 2 1/4" wide, cloth roll, length as required, line shroud, 126 glass fiber sleeving, Cord, shroud (8 each), 99" long, material, glass fiber spool, braided cord, commercial, Segment, parachute. (16 each) material, cloth, balloon finished, cut on bias, Plate, shroud, 3" O.D. x 16" thick with center hole and 16 shroud holes, material, Aluminum alloy bar 2024-T4, or sheet 2024-T3, Parachute Holder Assembly, 5" diameter x 5-3/8" high, material, sheeting, cotton, Type 5, Class 1 and bottom with tab, eyelets, pull cord, Miscellaneous parts, shear pin, straight pins, baffle plate, swivel pin plate, closing plug, lower support, split washers, parachute wrapper. Manufacturing firms bidding this item should have a technical staff consisting of engineers, chemists, technicians, metallurgists, and tool design engineers to design and maintain precision tools to produce this item by mass production methods. This item has pyrotechnic composition and is considered extremely difficult to manufacture to government specifications.

11204. PLUNGER f/FUZE M524 SERIES

Plunger f/Fuze M524 Series shown on Drawing #9205738 is 1.237" L x .998" D with various drilled cavities, counterbores, angular holes, radii and a gear segment. Material is brass, sintered metal powder, structural parts, Class B, ASTM-B-282 or free cutting, brass rod, half-hard, ASTM-B16. No protective finish is required. Item is not considered difficult to manufacture.

11250. PRIMER, XM109 LOADED

Consists of three metal components and two explosive charges, Cup Primer, .19" L x .1595" OD with .080" D hole in bottom, material,

aluminum alloy, sheet, 1100-0, Spec. ASTM B209, Disc, .138" D x .008" thick, material, stainless steel, Type 302 or 305, ASTM 167 annealed condition, Disc Closing, .138" D x .005" thick, material, aluminum foil, Spec MIL-A-148, Primer Mixture Charge, .047 grams of NOL No. 130 priming mixture, composed of the following, basic lead styphnate, 40 percent, Spec. MIL-L-16355, tetracene, 5 percent, antimony sulfide, 15 percent, class 2, Spec. MIL-A-159, barium nitrate, 20 percent, class 1, Specification MIL-L-3055A, Upper Charge, .065 grams of lead azide, Spec MIL-L-46225, one increment pressed at 15,000 pounds per square inch. Manufacturers of this primer will require qualified engineers, experienced in blending sensitive explosives and loading to meet the rigid test requirements demanded by the Government.



C9909. SPOTTING CHARGE, ASSEMBLY FOR M8 SERIES WARHEAD

Is approx. 5" long with a diameter of approx. 2-3/4" and is loaded with approx. 1 1/2 pounds of Spotting Composition. The Can Assembly is approx. 5" long consisting of Tube which consists of tubing, .65 plus - minus .006" thick copper, seamless, Spec. ASTM B75. Cover, approx. 2-3/4" in D .024 plus - minus .005. thickness consisting of copper sheet, cold rolled soft anneal, Spec. ASTM B152. Cover, bottom, approx. 2 1/2" D, .024 plus - minus .005 thickness consisting of copper sheet, cold rolled, soft anneal, Spec. ASTM B152. This item is considered difficult to produce in accordance with specifications.



INSTALLATION & ADDRESS	*FUNCTION
Alabama Army Ammunition Plant Childersburg, Alabama 35044	M (Exp) (Prop)
Badger Army Ammunition Plant Baraboo, Wisconsin 53913	M (Exp) (Prop)
Burlington Army Ammunition Plant Burlington, New Jersey 08016	M (MPTS)
Cohasset Army Ammunition Activity Hingham Naval Depot Hingham, Massachusetts 02043	LAP Mines
Cornhusker Army Ammunition Plant Grand Island, Nebraska 68801	LAP
Gateway Army Ammunition Plant 6703 Southwest Avenue St. Louis, Missouri 63143	M (MPTS)
Hays Army Ammunition Plant Pittsburgh, Pennsylvania 15207	M (MPTS)

\* Ammo - Ammunition  
 Chem - Chemical  
 Exp - Explosive  
 LAP - Load, Assemble, Pack  
 M - Manufacture  
 MPTS - Metal Parts  
 Prop - Propellant

## SB/ISA &amp; TELEPHONE NO.

CONTRACTOR & ADDRESS

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Frank H. Laird  
Area Code 205  
378-2411, Ext 21  
AVN

Olin Mathieson Chemical Corp.  
460 Park Avenue  
New York, New York 10022

Robert W. Rau  
Area Code 608  
356-5525, Ext 543  
AVN 551-3660/3661

Olin Mathieson Chemical Corp.  
460 Park Avenue  
New York, New York 10022

Momert C. Oreszko  
Area Code 609  
386-4001, Ext 210  
AVN 578-1570

Chamberlain Corporation  
845 Larch Avenue  
Elmhurst, Illinois 60126

R. W. Brown  
Area Code 617  
749-5500, Ext 239

Atlantic Research Corp.  
Shirley Highway at Edsall Rd.  
Alexandria, Virginia 22314

Clifford K. Larson  
Area Code 308  
382-4420, Ext 421  
AVN 553-3470

Mason & Hanger-Silas Mason Co. Inc.  
500 Fifth Avenue  
New York, New York 10036

A. D. Bain  
Area Code 314  
268-3078  
AVN 698-3078

Chrysler Corporation - Space Div.  
3044 West Grand Boulevard  
Detroit, Michigan 48202

Emery L. Leposky  
Area Code 412  
462-7520/7521  
AVN

Levinson Steel Company  
S. 20th & Wharton Streets  
P. O. Box 1617  
Pittsburgh, Pennsylvania 15203

## INSTALLATION &amp; ADDRESS

## \*FUNCTION

Holston Army Ammunition Plant  
Kingsport, Tennessee 37662

M (Exp)

Indiana Army Ammunition Plant  
Charlestown, Indiana 47111

M (Prop)  
(Igniters)  
(Bag Charges)

Iowa Army Ammunition Plant  
Burlington, Iowa

LAP

Joliet Army Ammunition Plant  
Joliet, Illinois 60436

LAP  
M (Exp)

Kansas Army Ammunition Plant  
Parsons, Kansas 67357

LAP

Lake City Army Ammunition Plant  
Independence, Missouri 64050

M (Small Arms  
Ammo)

Lone Star Army Ammunition Plant  
Texarkana, Texas 75501

LAP

## SB/LSA &amp; TELEPHONE NO.

CONTRACTOR & ADDRESS

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O. R. Freeman  
Area Code 615  
247-9111, Ext 103  
AVN 431-3790

Holston Defense Corporation  
P. O. Box 749  
Kingsport, Tennessee 37662

Maurice Mennen  
Area Code 812  
282-8961, Ext 4222  
AVN 726-1480

Olin Mathieson Chemical Corp.  
460 Park Avenue  
New York, New York 10022

Hubert C. Stenstrom  
Area Code 319  
754-5731, Ext 2209  
AVN 551-1770/1771

Mason & Hanger-Silas Mason Co. Inc.  
500 Fifth Avenue  
New York, New York 10036

G. M. CORRELL  
Allan L. Lawson  
Area Code 815  
424-2210/2803  
AVN 931-2210

Uniroyal, Incorporated  
1230 Avenue of the Americas  
New York, New York 10020

Robert L. Debald  
Area Code 316  
421-4999, Ext 205  
AVN 883-1520

National Gypsum Company  
Gold Bond Building  
Buffalo, New York 14202

E. I. duPont deNemours & Co., Inc.  
Wilmington, Delaware 19898

Jos F. Callahan  
Area Code 816  
796-3900, Ext 8  
AVN 631-3990/3991

Remington Arms Company, Inc.  
939 Barnum Avenue  
Bridgeport, Connecticut 06608

Arnold E. Rivers  
Area Code 214  
838-1501  
AVN 733-1450, Ext 501

Day & Zimmermann, Inc.  
1700 Sansom Street  
Philadelphia, Pennsylvania 19103

INSTALLATION & ADDRESS	*FUNCTION	SB/LSA & TELEPHONE NO.	CONTRACTOR & ADDRESS
Longhorn Army Ammunition Plant Marshall, Texas 75670	M (Prop) (rockets) (Missile Motors) (Pyrotechnics)	Eddie E. Brooks Area Code 214 935-5211, Ext 2532 AVN 733-1710	Thiokol Chemical Corporation Bristol, Pennsylvania 19007
Louisiana Army Ammunition Plant Shreveport, Louisiana 71102	LAP M (MPTS)	Gillis W. Womack Area Code 318 459-5140 AVN 733-1680	Sperry Rand Corporation 122 East 42nd Street New York, New York 10017
Milan Army Ammunition Plant Milan, Tennessee 38358	LAP	E. L. Parker Area Code 901 686-1531, Ext 5278 AVN 431-3740/3741	Harvey Aluminum Sales, Inc. 19200 South Western Ave. Torrance, California 90509
Newport Army Ammunition Plant P. O. Box 121 Newport, Indiana 47966	M (Chem) LAP	H. S. Hilleary Area Code 812 245-2251, Ext 233 AVN 551-1830 thru 1833	FMC Corporation 633 Third Avenue New York, New York 10017
Niagara Falls Army Chemical Plant Niagara Falls, New York 14304	M (Chem)		Machelor Maintenance & Supply Corp. 2055 Military Road Niagara Falls, New York 14304
Radford Army Ammunition Plant Radford, Virginia 24141	M (Ecp) (Prop)	Charles E. Flynn Area Code 703 639-7189/7631 AVN 935-3300	Hercules, Incorporated 910 Market Street Wilmington, Delaware 19899
Ravenna Army Ammunition Plant Ravenna, Ohio 44266	LAP	R. L. Barton Area Code 216 358-7111, Ext 581/585 AVN	Ravenna Arsenal, Incorporated Ravenna, Ohio 44266
Riverbank Army Ammunition Plant Riverbank, California	M (MPTS)	Eugene H. Johnson Area Code 209 529-8100, Ext 233/234 AVN 831-3995/3996	Norris Industries, Incorporated 5215 South Boyle Avenue Los Angeles, California 90058

INSTALLATION & ADDRESS	*FUNCTION
Scranton Army Ammunition Plant Scranton, Pennsylvania 18502	M (MPTS)
St. Louis Army Ammunition Plant 4800 Goodfellow Boulevard St. Louis, Missouri 63120	M (MPTS)
Sunflower Army Ammunition Plant Lawrence, Kansas 66044	M (MPTS) (Prop)
Twin Cities Army Ammunition Plant P. O. Box 689 Minneapolis, Minnesota 55440	M (Small Arms Ammo)
Volunteer Army Ammunition Plant Chattanooga, Tennessee 37401	M (Exp)



SB/LSA & TELEPHONE NO.

CONTRACTOR & ADDRESS

---

A. L. Sevison  
Area Code 717  
342-7801, Ext 31/51  
AVN 552-1470/1471

Chamberlain Manufacturing Corp.  
845 Larch Avenue  
Elmhurst, Illinois 60126

H. J. Hartmann  
Area Code 314  
263-3831/3832  
AVN 693-3831

General Motors Corporation  
Chevrolet Motor Division  
General Motors Building  
Detroit, Michigan 48282

William G. Moorhead  
Area Code 816  
471-6922, Ext 339  
AVN 631-3720

Hercules, Incorporated  
910 Market Street  
Wilmington, Delaware 19899

Stanley D. Stewart  
Area Code 612  
633-2301, Ext 750/751  
AVN 897-1500

Federal Cartridge Corporation  
Foshay Towers  
Minneapolis, Minnesota 55402

Donovan Construction Company  
1725 Carrol Street  
St. Paul, Minnesota 55104

Dixon Williamson  
Area Code 615  
892-0115, Ext 2239  
AVN 431-3750/3751

Atlas Chemical Industries, Inc.  
Wilmington, Delaware 19899

Farmers Chemical Association, Inc.  
P. O. Box 67  
Tyner, Tennessee 37392



